THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOL. XXXI APRIL, 1932 No. 4

CONTENTS

The Relation of the Physician to the Public. E. Starr Judd, M.D. 243
The Rôle of Amino Acids in the Animal Organism. I. Cystinuria and Cystine Calculi, A Surgical and Medical Problem. Howard B. Lewis, Ph.D. 249
The Present Status of Prostatic Surgery. H. W. Plaggemeyer, M.D., and Carl G. Weltman, M.D. 254
Primary Ileostomy in the Treatment of Generalized Peritonitis. E. C. Baumgarten, M.D., F.A.C.S. 257
The Practice of Medicine by Corporations. F. C. Warnshuis, M.D. 259
Septic Abortion Associated with Meningococcic Meningitis. Walter E. Larson, M.D., and Bernard H. Starmann, M.D. 267
A Plea for the Preliminary Iridectomy. J. G. Huizinga, M.D. 268
A Dislocation of the Carpal Bones—The Scaphoid and Semilunar: Report of a Case. F. T. Andrews, M.D. 269
Neurologic and Psychopathic Manifestations of Pernicious Anemia. Charles Kiely, M.D. 272
Myasthenia Gravis Following Electrical Shock. F. G. Lindemulder, M.D. 275
The Doctor's Log. William J. Stapleton, Jr., M.D. 277
Michigan's Department of Health. C. C. Slemons, Dr.P.H., M.D. 281
Editorial:
Dr. Judd's Address 283
The Beaumont Lectures 283
Are We Entering the Twilight? 284
Medico-Legal Defense 285
Post-Hippocratic Medicine 285
The Tuberculosis Problem 287
A Valuable Secret 288
Correspondence 290
Obituary 290
General News and Announcements 290
Medical Economics:
Can We Afford State Medicine? Part II. J. G. R. Manwaring, M.D. 291
Society Activity 293
County Societies 296
Woman's Auxiliary 298
The Doctor's Library 300

THE RELATION OF THE PHYSICIAN TO THE PUBLIC*

E. STARR JUDD, M.D.,† President of the American Medical Association

ROCHESTER, MINNESOTA

Great changes have occurred in the last several years. They are especially evident to us of the medical profession, for many modifications have been brought about through the changes in premedical and medical education. The standards of medical education were raised by the members of the profession in an endeavor to improve medical service, and that this has been accomplished is evident to all.

The principal effect of the change in medical education was promotion of science in medicine. Medicine is rapidly becoming a real science. We must all be impressed with the far-reaching effects that the progress in medical science has produced on society, and on the life that we lead today. It is also evident that with this advancement in scientific medicine there seems to be less interest in the art of medicine, and also less interest in the human side of the practice of medicine. Members of the medical profession realize this keenly, and many leaders in the profession are putting forth every effort to preserve the art and the human side by insisting that the work of the general practitioner is the basis of our medical practice and his important position in society must be maintained. Every assistance must be extended to aid science and research in medicine, but this assistance must not be given at the expense of the family physician.

The physician in the general practice of medicine should be given facilities that will aid him in promoting the art of practice, as

*Read before the Wayne County Medical Society, Detroit, Michigan, February 16, 1932.

†E. Starr Judd, M.D., F.A.C.S., received the degree of M.D. from the University of Minnesota in 1902. He has been head of a section in surgery since 1904, The Mayo Clinic, and is Professor of Surgery, The Mayo Foundation.

well as encouragement and assistance in his methods of investigation. The idea that all research must be carried out in elaborately equipped laboratories is wrong, and many of the most fruitful investigations will be done by those in general practice, in conjunction with their general routine. The general practitioner holds a most enviable position in society, but I am afraid that he is sometimes overawed by scientific progress. He should take advantage of the developments in science and try to apply them to the care and treatment of his patients, for, after all, that is presumably what research and investigation are for; that is, to advance knowledge of disease, and improve methods of treatment. If the general practitioner does not use this knowledge it may be lost, for those making the research studies are no more qualified to apply it practically than is the physician to make the research.

THE FUNCTIONS OF THE MEDICAL PROFESSION

The functions of the medical profession are first to advise, treat and care for those who are in need of their services; second, to plan and direct programs of preventive medicine and public health, and third, to protect the public in every manner possible against the activities of charlatans and irregular practitioners.

To most of us, nothing is so personal as medicine. Each community has one or more successful practitioners, whose success depends largely on appreciation of the fact that medicine is an entirely personal affair. In these modern trends of doing things en masse and in large numbers, there is some tendency to attempt to practice medicine by numbers and in an impersonal manner. This relieves the physician of many worries and great responsibilities, but the results of such a plan cannot be as satisfactory as one in which personal relations are maintained. It seems to me that it is the duty of organized medicine to do all that is possible to maintain this personal relationship between the physician and the patient, which is the foundation of medical practice in this country.

Medical associations formerly had as their chief function the professional improvement of their members. These organizations, particularly the county societies, the state associations, and the American Medical Association, must recognize the social, economic and political changes that have occurred as a result of the developments in scientific medicine. These improvements have come rapidly, and it takes a great deal of time properly to organize our societies to meet these changed conditions. There is evidence on every side that this is being accomplished.

SOCIAL FUNCTIONS OF THE MEDICAL PROFESSION

In the very early days, members of the medical profession were also army or navy officers or connected in some way with the government. After this, however, there came a period when the profession was much isolated from society in general. This I think was the fault of the profession itself. In modern times, however, no one realizes more than we do the necessity of close social relationship to accomplish our ends. The medical profession is also partially to blame for lack of knowledge on the part of the public of the work that it is doing. We are bound by principles of ethics which were established many hundreds of years ago. These principles were established by members of the profession itself, and it is only by maintaining these principles that we are in any way different from those in other vocations. The principles of ethics must still be maintained in order to protect society but we must take a broader view of them than some were inclined to a few years ago. We must recognize the fact that anything that is printed or spoken in public is public matter and that the press is entitled to have it. The time must never come when we will feel justified in advertising in the daily papers, magazines, or by radio, because all we shall ever have for sale will be our personal services, and positive guarantee of the results of our efforts cannot be made. It is our duty to do all that we can to let the general public know what is good and what is bad in the practice of medicine. Through the activities of our public relations and publicity committees of our component, constituent, and national association, I think that we can no longer be accused of being narrow in this matter of giving to the public all the facts regarding medicine that we have.

Each state association has its public relations committee, and in the more thickly settled communities the county society has

a public relations committee. Ross of New York has been especially active in having each county society form a committee, the duty of which is to see that the profession promotes a coöperative relationship with society. He says that the functions of such a committee of the county society are (1) to seek to establish a desirable relationship with any health organization of any kind having anything to do with the practice of preventive or curative medicine, (2) to seek to aid the medical profession to organize to give better service, and (3) to help in adjusting differences of opinion between organized medicine and other groups.

Preventive medicine has developed entirely since we have learned, as the result of scientific investigations, to know more about the cause of disease. Preventive medicine has already removed certain diseases entirely, and will do still more in years to come.

Schools have been established for the purpose of teaching the special aspects of preventive medicine and public health. Some of our medical men are devoting all of their time to this work. In the larger centers, extensive organizations have been formed to take care of this field alone. In the smaller places, the general practitioners are much better informed on these subjects than they formerly were, and are generally doing excellent work. The great danger as I see it in the present schemes for the practice of preventive medicine and public health is that there is a tendency for these groups to drift off by themselves. There is an inclination also for many business organizations to try to accomplish the same thing. We have an admirable plan in the state of Minnesota which I think might well be copied elsewhere. All organizations in our state, lay or medical, that are concerned with the practice of the healing art, are under the direct supervision of the Minnesota Public Health Association and the State Medical Association. One man, Dr. E. H. Meyerding, is secretary of both of these organizations, which means that all of the medical activities in our state are under the supervision of one head. The accomplishments of preventive medicine and public health activities are not fully realized by many of us. As our knowledge of disease advances, much more will be accomplished by these organizations.

We must never forget that public health and preventive medicine are as much a part of the practice of medicine as anything could possibly be. Those in charge of organized medicine in this country appreciate this and are making every effort to hold these organizations together, which is certainly for the best interests of society.

ECONOMIC RELATIONS OF MEDICINE

So much has been said about the cost of being sick and the cost of medical care within the last few years that I think many are becoming very suspicious. Much that has been said certainly will not bear close analysis. That there have been great changes in the economics of the practice of medicine, there can be no question. Whether these changes are out of proportion to what has been accomplished by them, is difficult to tell. In this country of 120,000,000 of people, there are 150,000 physicians, 50,000 dentists, 200,000 trained nurses, 100,000 practical nurses, and 8,000 technicians, all working in the interest of the art and science of medicine and public health. There are between 7,000 and 8,000 hospitals in this country. About 2,000,000 of the 120,000,000 people are sick enough to be in hospitals all of the time. Nearly 2 per cent of the population are seriously sick and an additional 10 per cent are slightly sick at all times. Ninety per cent of the illness is chronic and 10 per cent acute. In order to make the people happy they must be educated as to what constitutes scientific medical practice. I have of recent years been greatly impressed in visiting the commercial exhibits, particularly of the large medical societies, at the times of their annual meetings. One cannot help but be greatly impressed with all of the modern devices and implements which are aids in the practice of medicine. And one cannot help but wonder whether all of these are necessary and whether they have not taken away from the profession that art of medicine that we hear so much about. Many of these devices are very great aids, and it is through them that medicine has progressed to its present modern state. If a doctor adds to his laboratory and office equipment, he is obliged to have more space and more help. These are the things that are responsible for the increase in the cost of care. Times have changed and we have changed with them. When we say we have changed, we we do not mean that this refers to doctors alone, but to everybody. It is probable

that the economic changes in medicine are much less than in almost any other profession or industry at the present time. It is most appealing to hear about the great number of sick people who are not being adequately cared for. I have tried to receive definite information on this subject, but so far I have not been able to discover that many of the sick are going without medical attention because they cannot afford it or that adequate medical service is beyond the reach of any great proportion of our people. All through this economic depression many of the medical men have been giving their services, and as a result of keeping busy they have been much happier than some others. Charity is more extensive in the medical profession than in any other profession or business. It is my experience that few people want to be free patients; most of them want to pay and will do so if it is within their power. I believe that this question of medical economics has been greatly overemphasized until it has become propaganda promulgated largely by those outside the practice of medicine. It is to the best interest of all that the socialization of medicine should stop where it is now. Further socialization will be carried out to the detriment of those whom it is supposed to help.

The Committee on the Cost of Medical Care will make its report this fall. This committee was established to study the problem, which, according to the secretary of the American Medical Association, Dr. Olin West, is "the delivery of adequate scientific medical service to all of the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." Those concerned in the cost of illness are the 120,000,000 persons in the United States who sooner or later become sick and the 150,000 physicians of this country. This committee has done a tremendous amount of work, and the results of its studies will be valuable. Many interesting and important problems have already been studied. For instance, the following has been brought out: At all times in the United States there are approximately 700,000 tuberculous persons. Of the children now attending school and college, about 960,000 will enter a hospital for mental disease at some period in their lives if the present rate of first admission is maintained. It has been stated that forms of neurosis alone are responsible for more human misery than tuberculosis or cancer. There are probably 700,000 cases of malaria in the United States each year, with malaria carriers far outnumbering the cases. Joslyn indicates that he estimates that there are about 1,000,000 diabetic patients in the United States.

We are very fortunate in that the chairmanship of this committee is in the hands of Dr. Ray Lyman Wilbur. The following fundamental principles were proposed by Chairman Wilbur:

1. The personal relationship between the physician and the patient must be preserved in any effective medical service.

This committee feels that intimate knowledge of family and individual variations is essential to the best treatment. Its members also feel that the cumulative experience of the family doctor gives him a distinct advantage whether or not his formal education has been excellent. In enunciating this principle, they say that man is not a standardized machine, and that therefore the knowledge acquired by the personal contact between physician and patient is a most important factor in treatment. It is comforting to those in the actual practice of medicine to know that those directing the activities of the committee feel as they do regarding personal contacts. And we have reason to feel assured that the reports from this committee will not change this principle in any way.

2. The medical service of the community should provide for a systematic and intensive use of preventive medicine in private practice, and for more effective support of preventive measures in public health work.

Members of the medical profession appreciate this principle fully and through organized medicine most of these provisions have been made and the work is in progress now. More progress has been made recently in preventive medicine than in the curative field.

3. The medical service of the community should include the necessary scientific equipment for adequate diagnosis and treatment.

The committee calls attention to the fact that early tuberculosis cannot be detected without the aid of elaborate laboratory equipment, and we must all agree to that. We must comment, however, on the fact that this equipment is of no avail unless it is in the hands of most expert diagnosticians. More harm than good can come from the

use of the equipment unless it is so employed. The interpretation of roentgenograms of the chest in early tuberculosis is learned only after many years of hard work and study.

Reports of the findings of this committee have been sent out from time to time, and one is impressed with the tremendous extent of the work that it has undertaken, and also with some of the facts that it has set forth in its studies. The members say that an average of twenty-eight persons of every 100 who borrow from small loan companies do so because of expenditures arising from illness or death. Interest rates on these loans vary from 12 to 42 per cent per annum, which materially increases the burden of the average wage earner with a family. Of course the medical profession cannot be blamed for what seems to me to be an exceedingly high rate of interest, in these cases. Most physicians will discount the interest if patients wish to pay in installments.

In another place in the report, the medical care in a certain town is mentioned. Although there are fifty doctors who are idle much of the time in this town of 38,000 people, the reporter goes on to say that most of the people have some physical defect or condition needing correction, but that they rarely receive adequate care. Although it is likely that most people do have some physical defect, it is questionable whether the medical profession should attempt to correct all of these defects. It is difficult in the first place to say what a perfect physical specimen is, so I question very much whether all of these 38,000 people would be greatly benefited by having some kind of treatment. This report also says that these people rely largely on patent medicines, advertising quacks, or ancestor wisdom. The organized medical profession is trying every possible plan to protect the people against irregular practices. It is often said that this is a question of education, but unfortunately we find some of the most highly educated people who take absurd remedies regularly and seem to feel certain that they derive benefit from them. Quackery depends for its success on the mystery in medicine more than on anything else. We see examples of this in our daily practice. A good example of this is illustrated by the following case: Something more than two years ago a patient came to our clinic with all of the evidences of the most malignant type of cancer. He was carefully examined at that time. In view of the fact that his general condition warranted carrying out any treatment that might offer him any relief, we undertook to see if there was anything we could accomplish. We were much interested in a treatment that had been recommended by a reputable physician in England. This treatment was carried out, and at present the patient is apparently entirely well. Several other cases of this kind have been treated with the same remedy but to no avail, and we are at a total loss to explain the result in this single case.

Other mystifying examples are frequently encountered among patients who present themselves with cancers, and on whom we have performed an exploratory operation, with removal of a small bit of tissue for microscopic diagnosis, and this examination revealed the fact that we were dealing with cancer. The growth in these instances could not be satisfactorily removed because of the extent and involvement of surrounding tissue. The incision was closed and the condition pronounced inoperable. Most patients under these circumstances live but a very short time, but there are a certain few, of whom we have record, who had no treatment of any kind except the exploratory operation, but who apparently have recovered completely. If any treatment was used, of course that treatment received the credit for curing the condition. But these cases illustrate the mystery about disease and some of the unexpected results that are obtained by treatment. It is possible that some of the results reported by irregular practitioners in the cure of cancer have likewise been of this kind; it is more likely, however, that the results they obtain or report are in cases in which there never has been a cancer.

The Committee on the Cost of Medical Care calls attention to the fact that hospitals in the United States now represent an investment of $3,000,000,000. It also says that there is no systematic training available for hospital administrators. When we realize this tremendous investment in hospitals, we must appreciate the necessity of proper administration. I think, as a general rule, that hospitals are generally very well and economically administered, although it is possible that economies could be brought about in some places by trained administrators.

The final report and the recommendations of the Committee on the Cost of Medical

Care are awaited with much interest by all of us. Everyone realizes that costs have increased, but there is probably no expense so adaptable as that of medical service. And, it is likely that the final analysis will show that the costs of medical service are in the hands of the people. I am sure that this analysis will also show that the greater proportion of the sick are receiving good care. It is probable that the least important economic need is reduction in the charge for medical services. Organized medicine is ready to cooperate in every way that will assure the best medical service to all of the people at all times.

POLITICAL RELATIONS OF MEDICINE

Medical organizations have not, until recently, been as active in legislative activities as they should have been. I hope the time will never come when medicine dips too deeply into politics. We must never attempt to control any activities except those pertaining to scientific medicine and its relation to society. On the other hand, I think that we should be more active than in the past, and that we must see that our state and national legislators are acquainted with medical activities, so that they may know how to act. These men are anxious to be kept informed, and some of them state that in the past the only information they could obtain was from the irregular practitioners of the healing art, who were always on hand when any medical legislative matter was to be considered. Medical organizations fully realize now the committee which deals with legislative matters is an important one. I think that in many instances it is important for the local county society to have a political or legislative committee. Such a committee may be of assistance to the local government and may help to solve problems connected with public health and other activities. Such a committee will also be able to take its problems to the state legislative body whenever it is advisable to do so. Nearly every state association has its legislative committee, and these groups are busy. Their endeavors are giving excellent results. In many states, better laws are being enacted, regulating the requirements for the practice of medicine. Better laws have been made for the protection of health, and to facilitate the treatment of disease. Each year irregulars attempt to introduce new bills and these problems must be met in order to protect the people. Each year the question of vivisection is a subject for lively discussion in some part of the country; this makes it absolutely imperative to have an active organization in each state if we are to keep legislators informed so that they can pass laws that will protect society, and defeat others that would be a detriment.

It is of the greatest importance that those in the national legislature should know about medical matters, and the American Medical Association has a legislative committee, and sometimes special committees, which devote a great deal of time to this work.

The public looks to us not only for relief from pain, but for protection against disease, against quacks, against the innocent use of harmful drugs and other products. We are earnestly endeavoring to help secure and carry out proper legislation to control the situations that arise. Often it is necessary to direct and even assist in social and economic adjustments in order to raise the standard of living and the health of a family or a commuunity. Our manifold duties are constantly increasing because we are always eager to encourage any relationship or contact that will render the public a better service.

THE RÔLE OF AMINO ACIDS IN THE ANIMAL ORGANISM

I. CYSTINURIA AND CYSTINE CALCULI, A SURGICAL AND MEDICAL PROBLEM

BEAUMONT FOUNDATION LECTURE I

HOWARD B. LEWIS, PH.D.†
ANN ARBOR, MICHIGAN

During the same period in which Beaumont, whose work has been fittingly memorialized in the establishment of these Beaumont lectures by the largest medical group of the state in which his investigations were carried out, was making his epoch-making pioneer studies on the physiology of digestion, the initial studies of protein structure were begun. Thus in 1820, a few years prior to Beaumont's work, we have the first observation that "albuminous matter" (gelatin, casein, etc.) on treatment with boiling acids was decomposed into relatively simple substances, crystalline in nature. These observations of Braconnot antedated by some nineteen years the formal designation of the chief structural element of the cell as "protein" by the Dutch chemist, Mulder, in 1839. The importance he attached to these substances is clearly revealed in the derivation of the word chosen, protein from the Greek "πρωτεισς," "first in importance." Later developments of our knowledge of the structure and functions of the proteins have demonstrated that Mulder did not err in his choice of a term, the proteins are truly of first importance in health and disease.

The most striking development of further studies of the proteins has been the recognition that they are exceedingly complex colloidal substances, which may be readily resolved into a number of simpler crystalline substances, such as those referred to above, which collectively are designated as the *amino acids*. Today the emphasis has shifted so that, for the most part, we are concerned with the origin, function and behavior of the individual amino acids rather than with the proteins as such.

It is to the first of these amino acids to be so isolated as a product of the metabolism of the living organism, cystine, that I invite your attention today. In the subsequent lecture, problems concerned with other amino acids will be discussed.

On July 5, 1810, William Hyde Wollaston, an English physician, whose contributions to science were as brilliant and varied as his personality was eccentric, presented before the Royal Society in London a paper entitled, "On Cystic Oxide, a New Species of Urinary Calculus." Wollaston, who had previously contributed much to the study and classification of urinary concretions, in this communication stated, "It is now about five years since I first met with another species (of calculus), evidently different from each of those before described" and later, "This species is probably very rare; for although I have omitted no opportunity of paying attention to any urinary concretions to which I could have access, I have, to this time, seen only one other specimen of the same substance." After a careful description of the properties of the substance characteristic of this peculiar calculus, Wollaston wrote, "From the ready disposition of this substance to unite with both acids and bases, it would appear to be an oxide" and "I am therefore inclined to consider it as an oxide, and since both the calculi that have yet been observed have been taken from the bladder, it may be convenient to give it the name of cystic oxide, which will serve to distinguish it from other calculi." Thus were discovered together, the metabolic error, cystinuria, and the first of the amino acids concerned in metabolism, *cystic oxide*, or as we now term it, *cystine*.

In 1832, Berzelius, the distinguished Swedish chemist, pointed out the inconsistency of the term cystic oxide and suggested in its place, the name cystine. In the early analytical work, the presence of sulfur in cystine escaped detection until 1837, when Baudrimont and Malaguti, Thaulow, and others presented evidence of its occurrence in the molecule. Subsequent developments came slowly and up to 1899 cystine was known as a substance which was excreted in the urine in the peculiar and relatively rare condition known as cystinuria, which, due to its insolubility, gave rise to calculi similar to the calculus originally described by Wollaston, and which presumably had its origin in some process of metabolism.

In 1899, Mörner reported before the

†For professional note see page 58, January, 1932, number of the Journal of the Michigan State Medical Society.

Swedish Academy that cystine had been isolated by him from the products of hydrolysis of horn, and, two years later, Embden was able to identify cystine as a product of hydrolysis, not only of horn, but also of other common proteins, as serum albumin and ovalbumin. The general occurrence of cystine as a constituent of the protein molecule was thus established, an occurrence which subsequent investigation has fully confirmed. In fact, cystine is to be considered the chief sulfur-containing component of the protein molecule. The chief constituent of Wollaston's "new" urinary calculus is thus identified as an important unit of the protein molecule.

Under normal conditions the cystine which originates from the catabolism of protein either endogenous or exogenous is oxidized completely and the sulfur present in the molecule, oxidized to sulfuric acid, appears in the urine as sulfates, chiefly inorganic sulfates of such elements as sodium or potassium. A small part only of the total sulfur excreted by the kidneys is in the form of unoxidized or organic sulfur. There exists in normal urine a trace only of the amino acid, cystine. In cystinuria, on the other hand, there is a deviation from the normal course of metabolism of the cystine of the protein molecule. A part of this cystine escapes the normal oxidative processes and is excreted in the urine. The amount of cystine thus eliminated by the kidneys may be as great as two grams per day. Inasmuch as cystine is not readily soluble, particularly at the hydrogen ion concentration of the urine, it frequently is precipitated, thereby giving rise to calculi in the kidneys or urinary bladder. From the clinical viewpoint, cystinuria is then primarily a surgical problem, since it is to the surgical clinic that cystinuric patients most frequently present themselves for relief from the difficulties associated with the formation of calculi. It has been the study of these calculi which has, in the past, most commonly led to the diagnosis of cystinuria.

These calculi vary in size from very small stones which may be voided with the urine to stones weighing twenty grams or more. The striking case report of Tennant of Denver (1924) may be briefly discussed as an example of marked calculus formation. Fourteen cystine calculi aggregating 73 grams in weight were removed from the two kidneys and right ureter in three successive operations. One of these stones, removed from the cortex of the right kidney, weighed 50 grams. This stone and a bladder stone of approximately the same weight removed at operation in a Swedish clinic are among the largest cystine calculi recorded. Through the courtesy of Dr. Tennant and his group, it was possible for the writer to analyze a typical calculus from this case. The calculus examined was found to contain over 95 per cent of cystine.

The problem of the visibility of cystine calculi in the radiographic picture is an important one from the practical standpoint of diagnosis. There exists some question as to whether cystine calculi are invariably to be detected roentgenologically. General opinion and clinical experience classify them as shadow-casting stones, but the characterization of the shadow varies from "very dense" to "very faint." Graves of Boston has recently discussed a case in which a cystine calculus was removed, which had failed to reveal itself in two X-ray examinations. In a further study of this problem, he examined X-ray pictures of the gastro-intestinal tract after oral administration of two capsules, the one containing bismuth subnitrate and the other cystine. While the capsule containing the bismuth salt could be readily seen throughout the tract, that containing cystine was never visible. This would indicate that a calculus of pure cystine, if such exists, should not be readily detected roentgenologically. However, cystine calculi are seldom "pure" but are usually contaminated with a certain amount of inorganic matter, salts of calcium and phosphorus, and appear to cast some shadow as a rule. Graves has well summarized the present status of the problem of the visibility of cystine calculi under the X-ray. "It is probably fair to say in general, however, that the pure cystine calculi with their characteristic loosely-knit structure, should be classified among the relatively invisible stones. Unusually compact structures, large size or admixture with inorganic substances, may account for exceptions to this rule and may explain some of the results of other observers."

Early in the study of cystinuria, it was recognized that the condition commonly occurred in several members of a family group. A very remarkable example of this familial relationship has been studied from the clinical standpoint by Thin of Edin-

burgh and from the chemical side by his coworker, Robson. As shown in the chart, in the first generation in which cystinuria was noted, six of twelve children were affected, while of five children born to the cystinuric daughter, four were definitely cystinuric. In the chart (Fig. 1) the position of the subject of the initial study is indicated by the encircled figure, while crosses show the existence of members concerning whom information is lacking.

Cystinuria is usually considered to occur more commonly in males than in females. Garrod, in a summary in 1922, noted 103 males in a total of 150 recorded cases or 68.66 per cent males. In the last ten years, of 71 cystinuric individuals for whom the sex is recorded, the sex ratio is 42 males to 29 females, a distribution similar to that observed by Garrod. It seems possible that this tendency to a greater frequency of cystinuria in males than in females may be apparent only. It is probable that in the female, due to the larger size of the urethral opening, bladder concretions may be passed with the urine more readily than in the male and that the female cystinuric is not so frequently led to seek surgical aid as a result of cystine calculi and the condition thus more often escapes detection.

Age is not a factor in cystinuria. The first cystine calculus was removed from the bladder of a child of five, while several instances are known of cystinuria in children under two years of age. Sir Henry Thompson crushed a cystine calculus for a patient 81 years of age, who had passed a similar stone 39 years previously. Meyer has recently reported cystinuria in a woman 87 years of age, who had never experienced difficulties due to calculus formation.

It seems probable that cystinuria uncomplicated by calculi may be of more frequent occurrence than is usually believed. It has been stated that only "2.5 per cent of cystinurics develop stones, but the figure is probably high, on account of the large number of unrecognized cases of cystinuria." Since cystinuria uncomplicated by calculi has in the past been detected almost entirely by examination of the urine of relatives of patients who have been compelled to seek surgical aid for the removal of calculi, it is difficult for the writer to understand on what basis such an estimate was arrived at. The finding of cystine crystals in routine urine examinations has not been frequent. Sondern in 1911 stated that in the examination of approximately 35,000 specimens of urine, true cystinuria was encountered in only four cases and a similar frequency has been reported by others.

Heretofore the identification of cystine in the urine, except in those acute cases in which the characteristic hexagonal crystals of cystine separate and appear in the urinary sediment, has not been easy. However, as will be discussed later, the conditions which determine the precipitation of cystine and the appearance of the typical crystals of cystine in the urine are such that a considerable excretion of cystine may occur without precipitation. A simple clinical test for

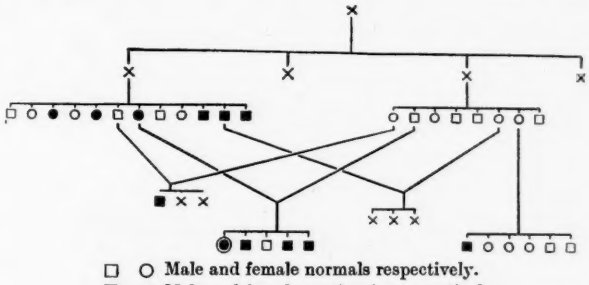

Fig. 1.

cystine, which could be applied routinely, would be of considerable value in detecting cystinuria, and in cases of renal colic such a test, if positive, should possess considerable diagnostic value. Such a test has not been available until recently. It is possible to apply to urine the well-known nitroprusside test for cystine as suggested by Brand. This test is simple to perform and while not absolutely specific for cystine affords valuable presumptive evidence of its presence. The writer has used this test in the examination of about 12,000 urines for cystine in the past three years and has found the test to be delicate and satisfactory. The test depends upon the reduction of cystine to cysteine by sodium cyanide and the reaction of cysteine with sodium nitroprusside to give a deep magenta color. We have in our laboratory followed the procedure suggested by Brand. Two c.c. of a 5 per cent solution of sodium cyanide are added to 3 c.c. of urine and the reaction is allowed to proceed for 5 to 10 minutes. Five to 8 drops of a *freshly prepared* 5 per cent solution of sodium nitroprusside are added and the contents of the tube are mixed. In normal urines a faint brownish color is developed, while with cystinuric urines a rather stable magenta

color, characteristic of the sulfhydryl group (SH) present in cysteine, appears.

We have examined by the use of this test urines of about 11,000 healthy young men and women in the past three years. These urines were collected for the most part in connection with the medical examinations given to entering students at the University of Michigan and the Michigan State Normal College. In this series, we have observed 4 individuals (3 men and 1 woman) in whose urines cystine crystals have been regularly present. These urines presented the typical picture of cystinuria, gave strongly positive nitroprusside tests and the percentage of organic sulfur was distinctly higher than the normal value. In addition, 14 individuals have been examined repeatedly in whose urines strongly positive tests for cystine by the nitroprusside test have been obtained, although crystals of cystine have never been identified in the urine. We consider this group as characteristically cystinuric as the first and smaller group. In none of these 18 individuals have we been able to obtain any history of the occurrence of calculi. We are gathering more information concerning the frequency of cystinuria in "healthy" individuals and believe that such data may prove of value in the ultimate solution of the problem of cystinuria. The collection of these data would have been impossible without the cordial coöperation of the officials of the Health Service of the University, Dr. W. G. Forsythe and Dr. Margaret Bell, and of Dr. Glenadine Snow of the Michigan State Normal College.

It has usually been considered that, except for the complications introduced by calculus formation, cystinuria is a harmless anomaly. The numerous reports of patients who have lived many years despite repeated formation of calculi would seem to warrant such a conclusion. Evidence is not lacking, however, which suggests that in young children, at least, disturbances of cystine metabolism are not harmless. Lignac in 1924 and 1925 reported three cases, young children all under two years of age, who presented the picture of marked malnutrition, a "progressive atrophy," which terminated fatally. At autopsy, it was possible to demonstrate cystine crystals in many tissues (spleen, liver, mesenteric lymph glands) both by histological and chemical methods. Similar observations were made by Abderhalden and Kaufmann in 1903. In view of the fact that cystine is believed to be an essential amino acid, in the absence of which normal growth and nutrition are impossible in the white rat at least, these autopsy findings suggest that the lack of normal utilization of cystine may have been an important factor in the failure of normal nutrition and death of these children. It is possible that in older patients, the requirements for cystine are not as great as in the growing individual and that cystinuria in adults does not result in as serious a disturbance of the metabolic processes. The frequent references to "gouty attacks" and rheumatism in the clinical histories of cystinuria suggest that cystine may be commonly deposited in the tissues of cystinurics, deposits similar to those just described.

What is the defect in metabolism which causes the characteristic failure of normal oxidation of cystine in cystinuria? What factors influence the excretion of cystine? Space does not permit a detailed discussion of these problems, nor is the solution of either problem definitely known. Some of the essential facts may be briefly stated.

(1) The cystine excreted is to a considerable extent endogenous as evidenced by the continued excretion of cystine in fasting or on a protein-free diet. (2) Cystine fed to a cystinuric patient is as readily oxidized to sulfates as when fed to a normal individual. In the remarkable case of Thiele, cystine isolated from the patient's own urine and fed to the patient was completely oxidized. (3) The absolute amount of cystine excreted appears to depend to some extent at least upon the level of protein metabolism and hence under normal conditions, on the protein content of the diet. Cystine excretion is markedly increased by the ingestion of a diet high in protein content. (4) Not all the sulfur compounds liberated in the processes of endogenous metabolism escape oxidation since a considerable amount of sulfates appears in the urine even under conditions of fasting. (5) In many instances, a disturbance in the catabolism of amino acids other than cystine is associated with cystinuria, since the diamines, putrescine and cadaverine, formed by deamination of arginine and lysine, frequently appear in the urine. This, however, does not appear to be a constant feature of the urinary picture in cystinuria. (6) An aggravation of the cystinuria by infection outside of the

genito-urinary tract has been observed frequently, particularly in the more recent investigations. Thus the patient of Magnus-Levy, admitted to the clinic with a diagnosis of rheumatism, during a period of high fever, excreted about 1.7 grams of cystine; later when the acute infection had disappeared and the temperature was normal, the cystine excretion dropped to about 0.5 gram despite a high level of protein metabolism. The significance of these and similar observations by others is not clear; it seems improbable that they can be satisfactorily explained entirely on the basis of the increased level of protein metabolism frequently associated with infection.

The therapy recommended for the treatment of cystinuria and cystine calculi has been designed to prevent the recurrence of calculi, since, if this can be prevented, little difficulty is to be anticipated. Two therapeutic measures are usually relied upon, a low protein diet and the administration of sodium bicarbonate in amounts sufficient to insure an alkaline urine.

Since, as already stated, there appears to exist a definite relation between the protein content of the diet and the amount of cystine excreted, restriction of the dietary protein should result in a diminished cystine output through the kidneys and hence in a lessened tendency to form calculi. Avoidance of certain kinds of protein foods (*e.g.*, eggs) in the diet has been sometimes prescribed), but in the opinion of the writer the quantity rather than the quality of the ingested protein is the important factor to be considered.

The use of sodium bicarbonate to insure an alkaline urine is based upon the greater solubility of cystine in alkaline than in acid reaction, the usual reaction of normal human urine. The maximal insolubility of cystine is at a pH of about 3.8; with increase in pH up to 6.0, the changes in solubility are slight; at a pH of 7.5, the solubility is increased about 50 per cent; while in solutions more alkaline the solubility increases rapidly up to 1300 to 1400 per cent at a pH of 9.0. Alkalinization of the urine almost invariably results in the disappearance of cystine crystals from the urine. This, however, is not to be interpreted as signifying that cystine excretion has ceased, but rather that conditions for its precipitation are not favorable. That such alkali treatment may dissolve calculi already formed appears to have been demonstrated. In cases recently reported by Crowell and by Reaves, large cystine calculi, readily visible by X-rays, disappeared completely after treatment with alkali.

In conclusion it should again be emphasized that failure to detect crystals of cystine in the urine is not an adequate criterion of the absence of cystinuria. Frequent references appear in the clinical literature to "cystine calculi without cystinuria," "intermittent cystinuria" and to a cessation of cystinuria following operative removal of calculi. Such conclusions are not warranted unless *chemical tests* for cystine in the urine are negative. In every cystinuric individual regardless of whether cystine crystals are present or absent in the urine, the possibility of calculus formation may be anticipated at some time, unless proper control measures are taken. We know little more concerning the ultimate cause of cystinuria now than at the time of its discovery in 1810, but the application of the principles of biochemistry has made it possible to control the formation of calculi for the most part. The ultimate solution of the problem can be achieved only by careful and extensive metabolic and clinical studies of a large group of individuals who exhibit this unusual disturbance of metabolism.

BIBLIOGRAPHY

For a review of the earlier literature, consult Garrod, A. E., Inborn Errors of Metabolism, London, 2nd Edition, 1923, 17, 88.

More recent literature has been reviewed by Lewis, H. B., Yale J. Biol. Med., 4, 437 (1932).

References to all the papers cited are presented in these reviews.

Meyer, E., Deut. Arch. klin. Med., 172, 207 (1931).

THE PRESENT STATUS OF PROSTATIC SURGERY

H. W. PLAGGEMEYER, M.D.,† and CARL G. WELTMAN, M.D.‡
DETROIT, MICHIGAN

In the early days of the old master surgeons, a patient with urinary obstruction was looked upon as a man who merely had an enlarged prostate; the obstruction per se was the one chief consideration. Thus the patient with a large prostate was subjected to operation without any preparation, the main idea being to remove the gland; little was thought about the damage to kidneys, heart and other organs indirectly caused by this obstruction, and little or nothing was done toward correcting these complications before operation. Looking at the subject from this viewpoint, there is small wonder that the mortality rate was very high.

The modern urologist has learned, from the experience of his predecessors, to consider the prostatic case from an entirely different angle. Today, he is looked upon as a patient who is suffering from the general systemic results of urinary obstruction and not simply from an enlarged prostate. True enough, the prostate may be considerably enlarged, yet, unless it causes urinary obstruction, it may never be discovered except possibly at the autopsy table. In other words, a man with two large lateral lobes may conceivably have no residual urine whatever, and consequently no back pressure, whereas, in another patient, the tiniest nub of subcervical enlargement or a small fibrous median bar, placed in a strategic position in the floor of the neck of the bladder may, like Horatius at the bridge, block the passage with ease, and, to mix the metaphor, may cause the most damaging back pressure with all its attendant insult to the whole bodily economy. It is a fact that a high percentage of men have enlarged prostates, yet relatively few of these require treatment for the condition: the enlargement must be of the obstructive type before symptoms of back pressure supervene.

Thus, today, regardless of the method of handling the obstruction, the first requisite in prostatic surgery is the preparation of the patient, or, in other words, the correction of those pathological conditions in the kidneys, heart, vascular system and other organs which have been brought about by prolonged urinary back pressure. Before a patient is subjected to any type of prostatic surgery, his urea nitrogen and the functional activity of his kidneys should be brought to as near a normal level as possible. We have an arbitrary rule that a patient must have a urea nitrogen under 20 mg. per 100 c.c. of blood plasma, his functional secretory index must be in the positive phase, and his blood pressure be balanced in order to qualify him as a fair risk for prostatic surgery. Bearing these facts in mind, it is easy to understand why the mortality rate has been greatly reduced from a very high percentage to the present comparatively low figure, due to our present exhaustive methods of preparing the patient before mechanical intervention. The following rule for blood pressure, advocated by Thomas, is a good one to follow. *In low-tension cases, when the systolic blood pressure is 110 or less, the diastolic must be over 60; when the diastolic is less than 60 the systolic must be over 110. In high-tension cases when the systolic is 180 or more the diastolic must be less than 100; when the diastolic is less than 100 the systolic must not be over 180.*

In spite of our advancement in preparing prostatics for operation and in spite of the fact that we have greatly reduced the mortality rate, there has been until recently no universally accepted radical change in the technic itself of removing the obstruction. Today we are entering upon a new phase in prostatic surgery, that of transurethral resection. The patient, of necessity, must be properly prepared before removal of the obstruction can be considered, regardless of the method of removal. In the future this preparation may, in the majority of cases, be carried out by catheter drainage instead of subjecting the patient to suprapubic cys-

†Dr. Plaggemeyer is a graduate of Johns Hopkins University, B.A. 1903, M.D. 1907. He is a member of the faculty of Detroit College of Medicine, Lecturer in the Post Graduate School, President Wayne County Medical Society, Director Grace Hospital, Vice President Urology Section A. M. A., Clinical Professor of Urology, Detroit College of Medicine, Genito-urinary Surgeon.

‡Dr. Weltman, A.B., M.D., is a graduate of the University Southern California, 1919. He did post-graduate work in Urology at University of Pennsylvania, is Assistant Urologist Grace Hospital, Detroit, and assistant in the Urological Department, Detroit Receiving Hospital.

totomy with its accompanying shock, inconvenience and mortality rate. When he is properly prepared, his gland will, in many instances, be resected intraurethrally rather than be subjected to suprapubic or perineal enucleation. Consequently he will be allowed to go home, after a short period (three or four days) following the resection, thus doing away with the tribulations of these elderly patients, caused by infected urine drainage over an open wound. In addition, shock will be practically eliminated and the hospitalization markedly shortened. By the same token they will consent the more readily to an operation which is devoid of all these annoyances and thus will present themselves at an earlier period before severe complications have resulted.

John R. Caulk, in his address to the Philadelphia Urological Association, says "There is probably no operation in surgery which has done more to alleviate suffering humanity than prostatectomy, but in spite of years of progress in development of surgical technic and the marvelous improvement in the preoperative preparation of patients, the exercise of care and attention to decompression through drainage, and other general features with which you are entirely familiar, this surgical operation with its persistently high attendant mortality rate, in spite of both general and special attention, has as yet not fulfilled the ideal. For this reason surgeons from different corners of the earth have been prompted to devise measures less susceptible to danger, and at the same time effective in the relief of obstruction."

Guthrie, in his description of the cure of bars at the bladder neck, read in 1830, cautioned against attempting the removal of adenomata transurethrally, principally because of inability to control hemorrhage. This idea has been handed down and adhered to until very recent years. Mercier, Civiale and Leroy D'Etiolles even before 1850 devised instruments for removal of bars at the bladder neck. In 1874 Bottini proposed his galvano-cautery incisor. In 1901, Chetwood used a modified Bottini instrument in relieving contractures, working through a perineal incision. In 1909, Young presented his punch. In 1913, Stephens and Heitz-Boyer used high frequency through the cystoscope for minor obstruction. In 1914, Georges Luys presented his method of destroying prostatic obstruction by fulguration. In 1918 Braasch used a punch through a direct vision cystoscope. In 1919 Caulk presented his punch, and it is to Caulk that we owe the knowledge that this procedure can be applied to lateral and middle lobe adenomata and not solely to median bars. Later came Collings with his electro-urethrotome. It was in 1926 that Maxmilian Stern presented his resectoscope, which was modified by Davis of South Carolina and successfully used in removing lateral and middle lobe enlargements. Then McCarthy presented his resectoscope, which brings us to the present status.

With the development of the Davis-Stern and the McCarthy resectoscopes, it has become possible for those properly trained in their use, successfully to resect the prostate gland transurethrally and to control hemorrhage just as efficiently as if it were done by the suprapubic or perineal method. Dr. Theodore Davis has performed approximately four hundred operations with the Davis-Stern resectoscope. We have all read his report in the Journal of the American Medical Association and marveled at his results. Many other men are now getting good results with both instruments.

We feel that the indication *par excellence* for transurethral resection is in those cases where the obstruction is still of moderate size and the complications as yet few. In the future we shall more readily recommend prostatic surgery of this type for early cases where we hesitated in the past because of the inconvenience and shock of the suprapubic or perineal operation. This early attack in itself will certainly tend to reduce the mortality rate. Resection, however, is contra-indicated in the presence of such complications as large infected diverticula, large bladder stones that cannot be crushed, and in those cases which, for one reason or another, do not tolerate catheter drainage. The size of the gland, primarily, is not a contraindication, it being possible to remove large offending areas by this method.

It has been the experience of all who have done prostatic surgery to see a very large gland shrink to half its original size after a few days of suprapubic drainage. Caulk has noted the same atrophic changes after removing the obstruction by means of his punch, and his observations have been confirmed by Davis, who has remarked upon this phenomenon repeatedly in cases in which the resectoscope was employed.

Davis states: "Examination by the cystoscope and post-mortem observations have demonstrated that it is the intra-vesical and intra-urethral encroachment of the gland that causes the obstructive features of prostatism. Experience gained during the past five years on more than two hundred resections has convinced me that it is not necessary to remove the entire gland in order to relieve the patient's symptoms, it being necessary to remove only that portion producing the obstruction. With the resectoscope, it is possible to remove the entire gland completely under direct inspection and rectal palpation with the sheath of the instrument in situ. Excellent results have been obtained by limiting the operation to removing the obstructing tissue only." If the gland is of large size, it can be removed by a two-stage resection, one lobe being removed at one time and the remaining tissue resected a few days later. If, after resection, recurrence of obstruction should come about at a later date the procedure could readily be repeated. However, over an experience of several years it has been noted by different observers that this has rarely been necessary. But along this line it must also be borne in mind that obstructive signs do recur at times in prostatics who have been operated by the older methods.

In the past what has the urological surgeon been able to offer the patient suffering with carcinoma of the prostate? Usually a *permanent* suprapubic drainage was instituted and either radium or X-ray treatment administered. Now, with the newer method of procedure his obstruction can be removed transurethrally, assuring him comfort, and all the annoyance of a permanent urinary fistula is obviated. This can be supplemented by radium and X-ray treatment. To quote Davis again: "In every case of malignancy it has been possible to restore to these unfortunates the ability to empty the bladder through the natural passage, without the discomfort and inconvenience of permanent suprapubic drainage. All these patients have resumed their usual vocations, which permanent suprapubic drainage would have prohibited."

We do not wish to convey the impression that in the future all cases of urinary obstruction will be cared for by resection. As time passes we shall be able to classify with greater certainty the indications for this type of procedure. But we do feel that the old dictum "Catheterize if you must and operate if you dare" is obsolete and does not apply to the future attack on this group. May we predict that, with the passage of time, this class of case will be operated earlier, when fewer complications are present and when better results can be obtained, instead of waiting until the added complicating factors greatly jeopardize the patient's successful recovery? Transurethral resection is not a specific means of handling all cases of urinary obstruction but certainly its judicious and efficient use will eliminate much suffering, particularly in cases of prostatic carcinoma, median bar formation and early glandular enlargement; it will greatly shorten hospitalization, and, indeed, may save the lives of many of these elderly sufferers, who, because of their poor general condition, could not survive a major procedure.

But to all and sundry, a final admonition against excessive enthusiasm is obviously indicated.

If this procedure is to survive the acid test of time without tremendous setback it must be attempted by those specialists only who are thoroughly familiar with the appearance of a normal bladder neck and who are willing to spend the required time and energy perfecting themselves in the technic of the operation; which, when properly executed, is difficult to learn. The mere removal of a few cuts is not sufficient. The entire obstructive tissue must be removed to get permanent results.

In the language of McCarthy, the new method deserves deliberate discerning investigation and judicious evaluation. In his words, "It will not be fostered by impulsive decision, nor will it on the other hand be hindered by prejudicial neglect." We agree with him that if time and accumulated experience treat it as kindly as those working with it suspect, it will go forward by its own natural momentum.

1701 DAVID WHITNEY BUILDING.

PRIMARY ILEOSTOMY IN THE TREATMENT OF GENERALIZED PERITONITIS*

E. C. BAUMGARTEN, M.D., F.A.C.S.†
DETROIT, MICHIGAN

The mortality rate of general peritonitis is almost universally reported at 50 per cent or better. Drs. McRae and Collar[1] last year at this meeting reported nineteen cases with a death rate of 52.6 per cent. Few conditions that the surgeon is confronted with can boast such a formidable figure. Therefore anything that shows the slightest indication of reducing this mortality rate is worthy of consideration.

The treatment here advocated is based on the premise that every patient dying of general peritonitis following appendicitis dies of intestinal obstruction. While every case of this type does not become obstructive in nature, it is potentially so from beginning to end and should be treated as such before obstructive symptoms supervene rather than after they have dominated the picture.

The clinical picture of acute intestinal obstruction is too well known to necessitate repeating, but it does not seem to be universally recognized that the late stage of general peritonitis is its mirror image, including the pronounced changes in the chemistry of the blood: the fall in blood chlorides, rise in CO_2 combining power of the plasma, rise in non-protein and urea nitrogen, as first observed by Tileston and Comfort.[2] Haden and Orr[3, 4] conclusively showed the effect of the administration of chlorides on the blood chemistry in experimental dogs as well as in man with obstruction, but it must not be forgotten that the continued beneficial effect of such treatment is contingent also upon the removal of the obstruction and release of the highly toxic contents of the intestinal canal. This can be accomplished only in two ways—either by normal evacuation or by surgical drainage.

It is a common experience for every surgeon to do an emergency operation for general peritonitis, only to return some hours later to find the condition of his patient probably considerably worse than he would have been in the same time unoperated. Some of them improve later, but many become rapidly worse and require a secondary operation to perform enterostomy, following which the great majority soon die. In this connection it is also common experience to note the rapid change for the better following formation of a spontaneous fecal fistula. Our experience with secondary enterostomy has been a perfect failure with 100 per cent mortality. Lakoff,[5] in relating a series of acute appendicitis, reports nine secondary enterostomies with 100 per cent deaths.

It was this experience which led us to adopt primary ileostomy as a routine treatment for all cases of generalized peritonitis. The first case was operated on September 28, 1926. Since that time nineteen such cases have been operated in a similar manner, with three deaths, or a death rate of 15.7 per cent. All nineteen cases here reported had identical etiology, namely, acute appendicitis. We have also performed ileostomy for peritonitis due to other causes, such as traumatic conditions, perforated ulcers, pneumococci infections, and mechanical obstructions, but for purely statistical purposes and to judge the merits of the procedure we have included only those having perforative appendicitis as an etiologic basis.

That this is not a new procedure is shown by the fact that Huebner[6] reported its use by Heidenhain as early as 1902 and Victor Bonney[7] reported six cases with recovery in 1916.

Lane[8] advocated the use of a semi-permanent ileostomy in 1917 and more recently many others have used enterostomy of some sort or another but only in selected cases, these usually the most severe. So far as we know, Clute[9] is the only other to report the routine use of primary enterostomy in generalized peritonitis.

Of the nineteen cases included in this report, there were thirteen males and six females. The youngest patient was seven years old and the oldest fifty-six or average age of 34.5 years. The duration of illness before operation, the shortest time was two

*Read before the Section on Surgery, Michigan State Medical Society, Pontiac, Mich., September 23, 1931.

†Dr. Baumgarten graduated from the University of Michigan, A.B. 1915, M.D. 1918; spent two years in residence in the surgical clinic, Ann Arbor, and a year in the Research Hospital, Kansas City. He located in Detroit in 1921. His specialty is surgery.

days and the longest fourteen days. The average duration of illness before operation was 5.7 days. The appendix was removed in thirteen instances and not removed in six. The diagnosis of generalized peritonitis was based on the clinical symptoms together with the finding of free fluid pus, fibrinous exudate between the coils of bowel and the inflamed condition of the peritoneal covering of the intestine.

Of the patients who recovered, the shortest time in the hospital was 14 days, the longest was 67 days. The average hospital stay was 24.6 days.

TECHNIC

The technic used is very simple and has been the same in all cases. The incision of choice is made. If the appendix can be removed easily, this is done. We do not believe it wise to make any undue effort in this direction, thereby breaking down existing natural barriers against the further spread of infection. The terminal ileum is brought up as carefully as possible. A purse string suture of circumcision catgut is placed in the antimesenteric border, after which a stab wound is made either with the cautery or sharp pointed scalpel. A No. 24 French catheter with multiple openings is inserted through the opening and caught with one bite in the purse string. The tube is then invaginated. A second purse string is placed around it, caught through the tube and tied. The tube is then brought through the omentum if possible. If there is a localized abscess a soft rubber drain is inserted, otherwise no drainage other than that provided by the enterostomy tube is used.

There is considerable difference of opinion as to the part of the bowel in which the tube should be placed. We believe that the colon can usually be emptied by enemata, and, moreover, is seldom found to be distended. The terminal ileum is usually easily accessible and the most common site of paralytic ileus, and is found usually filled with quantities of liquid feces, which should be evacuated. There is less irritation of the skin from the discharge and less disturbance of digestion and absorption than is the case with jejunal fistulæ, should the latter be rather slow in closing.

We have resorted to secondary closure of the fistula in only one instance and this we are satisfied would have closed spontaneously had not the patient insisted that it be closed at once.

Clute[9] believes that he obtains better results with jejunostomy. His results with ileostomy, however, were based on secondary as well as primary operations, which, we believe, accounts for this difference.

POST-OPERATIVE COURSE

The patient is placed in bed with the head elevated. Nothing is given by mouth for at least twenty-four hours. Sufficient sedatives are given to control pain. As much as possible of the bowel contents are drained and aspirated immediately. From 200 to 300 c.c. of 5 per cent glucose in 2 to 5 per cent salt solution is instilled through the tube every three hours—the tube remaining clamped for two hours and allowed to drain one hour. We have given the solution by the drip method but this does not seem as satisfactory as does the instillation of a large amount of fluid at one time. This often produces a free, liquid evacuation of the bowel within a few minutes after entering the intestine. It is really surprising to note the rapid disappearance of distension and vomiting. There is no complaint of thirst and ketone bodies soon disappear from the breath and urine, with the rapid restoration to normal of the disturbed acid-base balance of the blood. The tube usually comes away spontaneously within four or five days with almost immediate closure of the fistula. In two instances in this series it has been necessary to reopen the fistula after the tube was removed because of the recurrence of obstructive symptoms.

FATALITIES

Of the patients who died, the first was a male aged 44, who had been ill seven days. He entered the hospital in a very critical condition. Temperature was 97.6, pulse 144, respirations 45. The blood showed 100 mgms. chlorides per 100 c.c. He died three hours after operation.

The second was a female, age 27, who had been ill five days previous to admission and lived eight days after. Her pulse was 140 on admission, at no time dropping below 120. Her temperature continued to rise and was 105 at death. At no time after operation was there vomiting or distention of the abdomen. She expired eight days after operation, with a non-protein nitrogen of 35.8 mgms. per 100 c.c. and blood chloride

of 593 mgms. per 100 c.c. Death in this case was apparently due directly to the results of bacterial toxemia.

The third case was a female child of ten. She had been sick four days previous to admission. For some unknown reason we were unable to obtain satisfactory drainage from the tube. Death occurred thirty-six hours after operation, with all the symptoms of paralytic ileus and obstruction. The laboratory findings were not recorded.

CONCLUSIONS

1. Patients with generalized peritonitis of appendiceal origin should be treated as cases of intestinal obstruction.
2. Intestinal drainage is paramount in the treatment of these cases.
3. Primary ileostomy is a satisfactory means of securing intestinal drainage, controlling dehydration and the acid-alkali balance of the blood plasma.
4. Persistent fecal fistula is not a common complication.
5. Nineteen cases of generalized peritonitis following appendicitis are reported, with three deaths, or mortality rate of 15.7 per cent.

3528 VAN DYKE AVENUE

REFERENCES

1. Coller, F. A., and McRae, C. C.: Observations on acute appendicitis; Factors influencing mortality. Jour. Mich. State Med. Soc., 30:319, May, 1931.
2. Tilestone, W., and Comfort, C.: Total non-protein nitrogen in blood. Arch. Int. Med., 14:620, 1914.
3. Haden, R. L., and Orr, T. G.: Clinical changes in blood in intestinal obstruction. Jour. Exper. Med., 37:377, also 365.
4. Haden, R. L., and Orr, T. G.: Chemical changes in the blood after intestinal obstruction. Surg., Gyn. and Obst., 37:465.
5. Lakoff: Personal communication.
6. Huebner, H.: Secondary enterostomy in peritonitis and ileus. Beitr. Z. Klin. Chir., 134:93, 1925.
7. Bonney, Victor: British Medical Jour., 1:583, Apr., 1916.
8. Lane, J. W.: Ileostomy for general peritonitis and ileus. Boston Med. and Surg Jour., 176:304, 1917.
9. Clute, H. M.: Enterostomy in obstruction and peritonitis, Trans. New Eng. Surg. Soc., 10:247, 1927.

THE PRACTICE OF MEDICINE BY CORPORATIONS*

A PARTIAL SURVEY AND STUDY OF PROBLEMS INVOLVED

FREDERICK C. WARNSHUIS, M.D.
GRAND RAPIDS, MICHIGAN

To The Federation of State Medical Examining Boards of the United States:

SECTION I. TRANSMISSION

President Rypins, in a letter dated June 17, 1931, appointed the writer to make a survey and study, to formulate conclusions and to make recommendations on the subject of "The Practice of Medicine by Corporations." The appointment was accepted. I have the honor of transmitting to this Federation my findings.

These deductions are not to be construed as authoritative. Undoubtedly attorneys will be able to cite exceptions. The quest has been to present the question as a whole, to cite certain conclusions and to advance tenable recommendations.

SECTION II. DEFINITIONS

In order that we may approach this problem from a common basis, it is desirable that definitions and an initial premise be defined and stated.

a. *Practice of Medicine.*—Every state law defines in greater or less extent what constitutes the practice of medicine. Some statutes are rather vague and general in their definitions. Other states have included in their law a most carefully worded, specific and inclusive definition. The courts of every state have, as a rule, defined the practice of medicine and rendered decisions and rulings in accordance with such definitions. It may be assumed in general that the definition of "practice of medicine" has been ruled upon and established by the highest court of every state. So for illustrative purpose alone I include the Michigan definition which has been sustained upon several occasions by the Supreme Court of Michigan and which is as follows:

In this act, unless otherwise provided, the term "practice of medicine" shall mean the actual diag-

*Presented before the American Medical Association Conference, Chicago, February 15 and 16, and also before the Kent County Medical Society. At the Chicago conference this was pronounced the "most exhaustive résumé on the subject presented to date."

nosing, curing, or relieving in any degree, or professing or attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever.

b. *Corporation.*—"Any body consisting of one or more individuals, treated by law as a unit and to act as a single person."

c. *Corporation Powers.*—The states of the Union have enacted legislation and set forth the powers and privileges of a corporation.

In general it can be stated that a corporation acting within the scope of its charter can do, act and serve the same as an individual except where federal and state laws set up limitations and restrictions.

"A corporation is a fiction and exists only in legal contemplation." "It is an impersonal entity." It is an artificial person created by statute. It can act only indirectly and then only through persons or agents. A corporation, as an artificial person or entity, cannot act, practice, serve or function, nor can it assume the role of a living individual or person so defined or cited in laws that govern and supervise individual rights and privileges, or the laws that convey conditional individual license and regulatory provisions. There exist a wilderness of court decisions sustaining this contention. The courts have gone even further in declaring that even though a corporation has been incorporated, obtained a legal charter and in its articles of incorporation has declared its intent, purposes and scope of business, nevertheless it will be amenable to penalties if it violates existing laws that are applicable to individuals.

While a corporation is made up of men and women, one of its outstanding characteristics is that it exists and functions as a corporate organism separately and apart from the men and women who compose it.

The charter of a corporation determines its nature and function. While law texts say a corporation is a legal entity, yet it often functions as a very real living thing in the life of a community. Corporations own and operate universities and institutions of learning. Hospitals and welfare agencies are owned and operated by corporations; banks, street car lines, lighting systems are owned and operated by corporations. Foods, drugs, household needs, building and loan associations are manufactured, operated and give public and home service under corporate ownership and guidance. Therefore it is difficult and confusing to conceive of these corporations as being only "legal entities."

It must also be remembered that a corporation is an organism that receives its authority and power solely from the state. It derives no authority or power from its component members. The fact that every member of a corporation is licensed to practice medicine does not endow a corporation with authority so to practice. The same holds true in the field of corporate law and dentistry. Authority and power ever descends downward from corporation to agent and never from agent to corporation.

Without entering deeper into the bewildering voluminous legal discussions and comments, the following premise is assumed: A corporation cannot function as a natural individual where law specifically states and defines the natural individual and confers upon him definite personal, individualistic rights and privileges.

SECTION III. LICENSES

It is well sustained by decisions rendered by Federal and State Supreme Courts that "the police power of a state may be exerted in the form of state legislation—when such legislation bears a real and substantial relationship to the public health, safety, morals, or some other phase of public welfare." The practice of medicine is something vitally touching and affecting the public health, and, therefore, a matter for the regulatory police power of each state.

The regulatory acts of every state include this fundamental in the title and wording of their laws.

The license to practice medicine is an inherent right of every individual provided he complies with all the laws and regulations governing the exercise of that right. It is a legislative privilege or grant, based and issued under definite and well defined conditions, conferring certain clearly designated rights and privileges to the individual engaged in the practice of medicine.

It is strikingly fundamental to the formation of a final opinion and decision to note well that in the laws of every state an outstanding designation is employed. All stress "person or persons," "he or she" and thus emphasize the *personal natural entity* in every legislative enactment governing

medical practice. In court pleadings and decisions "law," "medicine" and "dentistry" are classified and recognized as learned professions.

The laws of every state of the union incorporate a mandate that every person or individual who sets forth or holds out to practice medicine shall first obtain a license to do so from a created and designated board or body that the law endows with definite regulatory and police powers. These laws define the conditions under which a license is to be obtained and the qualifications that one must possess to be eligible to secure licentiate rights and privileges. Likewise these laws all incorporate conditions to be observed and complied with in order to maintain a continuance of the license. Each state law specifically sets forth the acts and practices that form a basis for violation of the licentiate's privilege and prescribes the causes and methods for revocation of the license.

Again it should be carefully noted that each law provides:

a. A penalty for practicing medicine without a license and this is a common wording—"Any person," or "he or she," or "any individual" who practices medicine within the definitions of the law without obtaining a license, as provided by the law, shall be guilty of misdemeanor and specifies the punishment for conviction. In some states violations are defined as felonies.

b. The possessor of a state license may or shall have his license revoked if he engages in certain specified acts, or resorts to certain practices, or if he is convicted for certain offenses, in courts of competent jurisdiction.

In all of these provisions reference is made to "person" or "individual."

A corporation seeking authority to practice medicine would fail instantly when called on to show that it had adequate preprofessional education and professional training. It could not show that it had attended college or served an internship. A corporation could not submit to an examination to determine the nature and extent of its knowledge of medicine.

When the State grants to an applicant a license to practice medicine it authorizes him alone so to practice. It does not authorize him to delegate that right, or any part of it, to any other person. A licensed physician has been convicted of practicing medicine without a license where he undertook to cover the activities of an unlicensed practitioner by authorizing him to examine patients and to prescribe for them in his name. (Golvin et al v. State (Okla.), 131 Pac. 546.)

The agent of a corporation who undertook to vest in the corporation any part of the authority granted to him by the State to practice medicine would certainly, in the State in which that decision was given, be guilty of unlawful practice, and probably the same principle would apply in other states. If this principle should be invoked against physicians who serve corporations in the corporate practice of medicine, it would serve as an effective check on such practice.

This sectional comment may be summarized as follows:

a. State enactments require that each person or individual who desires or intends to practice medicine must apply for license.
b. Meet well defined requirements to qualify for a license.
c. Must observe the conditions under which the license is obtained.
d. When found guilty of certain acts or practices his license is subject to revocation.
e. He commits a misdemeanor or felony if he practices without a license.
f. No reference can be found conveying the right to a corporation to obtain a license or to practice medicine.

SECTION IV. LICENSING OF LEARNED PROFESSIONS

It is necessary at this time to refer briefly to the accepted and established decisions rendered upon state rights to issue licenses to members of the learned professions. The principle is well founded. Every state has enacted governing laws that are clear in purpose and provisions.

Law, medicine and dentistry are learned professions. Neither is an ordinary trade or calling which all citizens alike may pursue. Only those who are qualified by statute, by study of the science and art and by experience to practice may so engage if the legislature sees fit to so ordain.

One is unable to find a contrary authority or cite a single text advancing a contrary view upon this well established licensing legislation. To so license is within the regulatory or police powers of a state.

It is likewise held that to obtain and hold such license is not an unconditional inherent right of man. Neither is it an unconditional, inalienable right sustained by the federal constitution and vouchsafed by the

fourteenth amendment. In the last analysis it is merely a conditional grant or privilege.

One again finds a wilderness of citations sustaining this principle. They deal with medicine, law, dentistry, optometry, architecture, chiropody—in fact with every human endeavor that legislatures have recognized by providing governing statutes.

This fact forms a second fundamental that has a vital bearing upon a final conclusion.

SECTION V. FUNCTIONS OF CORPORATIONS

When the question is raised as to the rights, functions and powers of corporations one is at once thrust in the nigh impenetrable maze of corporation law—a well recognized law speciality. I would not pose as one able to set forth summarized deductions and conclusions that would constitute axioms or unassailable opinions. I content myself with the reasoning and opinions handed down by two Supreme Courts—California and New York. I submit them as being the crux of this entire question.

1. "A corporation is a fiction and exists only in legal contemplation."

2. "A corporation, as such, cannot subject itself to an examination or itself possess any of the necessary requisites to practice medicine."

3. "It is physically impossible for a corporate entity to be licensed to practice medicine or surgery."

4. A corporation is denied the right to practice law or dentistry. The practice of medicine depends upon the skill and learning of the practitioner and a corporation cannot reflect personal skill or learning.

5. A corporation, as an impersonal entity, cannot be conceived as a personal entity judging the nature, character or symptoms of disease or determining the proper remedy. Members of the corporation, or persons in its employ, might do these things, but the corporation itself is incapable to do them.

6. A corporation cannot pass an examination and obtain a license.

7. A corporation cannot be master over a servant over whose acts it could have no power of supervision (the employed physician).

8. A corporation could violate every inhibition of a medical statute and be immune from punishment.

9. A corporation license could not be revoked for it would have no license to practice to revoke.

10. The Board could not revoke the license of a physician employed by a corporation for any acts of a corporation because they could claim they were not liable for the acts of their employer.

11. Physicians employed by a corporation are its servants and agents. They are bound to do its bidding.

12. A corporation cannot practice medicine directly and so it cannot practice medicine indirectly for that is an evasion which the law will not tolerate.

13. Corporate law authorizes corporations to carry on any lawful business but not unlawful business. To practice medicine without a license by a corporation, and a license cannot issue, would be an unlawful business.

14. Legislatures, in authorizing corporations to carry on lawful businesses, did not intend to include the learned professions.

15. A person has no absolute or constitutional property rights to practice a profession such as law or medicine; and if a natural person, a human being, is unable to so engage in professional practice, a private corporation, an artificial person, cannot assume or claim that right.

16. A corporation cannot register as a physician.

17. A corporation in name cannot possess medical knowledge of itself.

18. The Supreme Court of California holds:

a. A corporation may be formed for any purpose for which individuals may *lawfully* associate themselves.

b. California individuals may not singly or in association engage in the practice of medicine without a special license so to do, neither can a corporation.

c. A corporation, as a corporation, cannot pass a medical board's examination.

d. You cannot do indirectly that which you cannot do directly.

e. Corporation practice of medicine is illegal.

With these citations I leave this phase of the subject realizing quite fully that it is possibly miserably inadequate and only partially representative of a digest of opinions or rules. It should, however, serve in aid-

ing one to perceive the attitude of our courts.

SECTION VI. PRACTICE OF MEDICINE IS AN INDIVIDUALISTIC ACT OR ART

In an issue before the bar such a statement would necessarily demand substantiation. In this discussion and before this group I do not deem it necessary to so argue.

I rest the point with this statement. The practice of medicine, the relationship of patient and physician, is individualistic. It cannot be transferred to, or assumed by, a corporation for the relationship is very personal, and a corporation cannot assume a personal rôle. Lastly, he who practices medicine assumes a personal responsibility of a nature that cannot be assumed by a corporation.

SECTION VII. ATTITUDES OF STATE REGISTRATION BOARDS

A questionnaire was sent to the Secretary of every State Board. Thirty-three Secretaries replied. These data were obtained:

1. The courts of twenty-three States have rendered no decisions on corporation practice.
2. Ten courts in ten States handed down opinions that corporation practice of medicine was illegal.
3. Seven Attorney Generals have given the opinion that corporation practice is illegal.
4. Boards of twenty-four States have not considered the question or have had no occasion to consider it.
5. Five State Boards report that corporations have applied for a license but were denied their application.

The detailed answers are imparted in an appendix to this study.

From the foregoing it is quite apparent that there exists a tendency toward opening the doors for legalizing corporate practice. The adverse court decisions undoubtedly have restrained a nationwide movement to that end. An entering wedge is sought. Whether it will be found I am disinclined to state. There are borderline organizations dangerously close and it is well that their practices be closely scrutinized.

SECTION VIII. INCORPORATED HOSPITALS AND CLINICS

This group is closely intermeshed and impinges upon our problem. We are all aware that there are incorporated hospitals practicing medicine and a large number of clinics hold corporate articles.

I undertook to review the laws and rulings but it was not long before I perceived a myriad of ensnaring legal exceptions and exemptions. Medical practice by hospitals is a grave medical economic problem.

In general it may be said that whether a hospital can enter in competitive medical practice depends upon the laws under which corporate articles are issued, the exemptions from existent practice laws that are specified legally in the articles and the purposes for which incorporation is sought and accomplished. An answer involves all these factors. A guiding answer and position can only be sought from the courts. Each hospital and clinic must be adjudged individually after a thorough investigation of its practices and the soundness of its legal rights.

In studying the corporate practice of medicine and its effects, the distinction must be drawn between the treatment of the defective, sick, and injured, by corporations organized for that purpose, and the treatment of the defective, sick, and injured at the expense of corporations, and under their direction, *as an incident to the carrying out of other purposes for which the corporation was organized.* In the first place, as has been shown, the practice of medicine by corporations seems to be clearly unlawful. When, however, a corporation engaged in industry or an insurance corporation employs physicians to treat the defective, diseased and injured, a somewhat different relation arises. The normal relation of a physician to such corporations is that of an independent contractor, not that of an agent or employee of the corporation. His relation to the corporation employing him is identical with the relation that exists between a physician who is called on by the parent of a sick child to treat that child and the parent himself. In the latter case one would hardly say that the parent was practicing medicine because he had employed a physician to treat the patient for whose care he was responsible and incident to the relationship existing between them. Similarly,

one would hardly say that a manufacturer who employed a physician to treat employees injured in the course of business was practicing medicine.

The exact relation of incorporated hospitals, dispensaries, and clinics to the corporate practice of medicine is more difficult to define. Possibly those that are incorporated primarily for the relief of the sick and injured might be held not to be practicing medicine as a business, if they assumed primarily to furnish only hospital and nursing accommodations. Medical attendance might be regarded as a mere incident to the furnishing of such accommodations. On the other hand, corporations organized for the purpose of conducting hospitals, dispensaries, and clinics for profit, with the prime object of furnishing medical services, would seem to be clearly within the category of corporations practicing medicine.

SECTION VIII (2). WOULD OR WOULD NOT THE PRACTICE OF MEDICINE BY CORPORATIONS REACT TO THE ADVANTAGE OF THE COMMUNITY, NOW AND IN THE FUTURE?

In discussing this matter, it is necessary to consider the practice of medicine by corporations organized for that specific purpose as something apart from the practice of medicine—if it be the practice of medicine—by industrial corporations as an incident to their main business, by hospitals, dispensaries, and by clinics. In favor of corporate practice it has been urged:

1. That medical services could be more cheaply rendered by a corporation, because of its more efficient business organization and the volume of practice that it would do.
2. It has been urged that the practice of medicine by corporations would be more efficient than the practice of medicine by individual physicians, because of the greater ease with which the services of specialists would be divided by corporations, and at a lower cost.
3. It has been argued that the practice of medicine by corporations would be more efficient than the practice of medicine by individuals, because medical directors, supervisors, and consulting physicians would see that the medical staff generally rendered medical service of the higher type, if for no other reason than to protect the corporation from suits based on malpractice. The practice of medicine by corporations, it has been said, would simplify the choice of physician by a patient, for the patient would have to do nothing more than to select a reliable corporation, and then trust him to general practitioners and specialists provided by it.
4. The practice of medicine by corporations, it has been suggested, might render it easier for a patient to collect damages in the event of malpractice, because of the greater difficulty that a corporation would have in concealing its assets, as compared with the possibility of the concealment of assets by an individual physician.

The alleged advantages are based on the presumption, of course, that a corporation practicing medicine would be operated according to the best of moral, ethical, and professional standards. Just how corporations would be compelled to operate in that manner is not clear. Even under the rigid supervision exercised by the Government over our banks, banking institutions supposedly of the highest order fail, and the stockholders and depositors lose their money. Just so, corporations engaged in the practice of medicine would, under the best of supervision, occasionally fail, with a loss, not of money, but of health and of life. The lack of *personal* responsibility on the part of the officers of the corporation, other than the attending physicians directly in charge of patients, would not tend to establish and maintain the best morale in such practice. The intimate personal relationship between physician and patient would tend to disappear. Of course, a patient would still be at liberty to employ a physician not practicing under the supervision, direction, and control of a corporation, but whether private practitioners could exist in competition with corporations with the ability of the corporation to make a popular appeal and to give cut rate services, is questionable. Whether the conversion of physicians into the hired men of corporations would tend to produce the most desirable class of men to enter the practice of medicine is questionable.

The exact relation of incorporated hospitals, dispensaries, and clinics to the problem of the corporate practice of medicine requires further study. The matter involves questions relating to so-called open and closed hospitals, the free choice of physicians by injured and sick workmen, and the incorporation of physicians into legally

organized clinical groups for the purpose of conducting a joint practice. If corporations are to engage in such work, and doubtless many of them will continue to do so, it seems probable that special legislation should be enacted to govern their organization and management.

SECTION VIII (3). WOULD OR WOULD NOT THE PRACTICE OF MEDICINE BY CORPORATIONS REACT TO THE ADVANTAGE OF THE MEDICAL PROFESSION?

That the practice of medicine by corporations would tend to reduce such practice to a business and to destroy it as a profession seems probable. That it would break down the intimate and independent relations between physicians and patients and thus debase the social and professional standing of physicians also seems probable. Probably, too, it would tend to make the incomes of physicians more nearly dependent on their years of practice under some corporation than on their professional ability, and thus diminish individual initiative and interest. That these handicaps would tend to prevent the most desirable type of men from entering on the practice of medicine seems likely.

SECTION VIII (4)

The corporate practice of medicine is with us, in the form of incorporated clinics, and is probably here to stay. Other corporations that might be named are either actually practicing medicine or they are trenching so closely on the medical field that their activities cannot be distinguished from medical practice. Until the medical profession knows the reason for the development of such corporate practice, its probable effect on the community, and its probable effect on the medical profession, it should hesitate either to approve corporate practice generally, but should undertake to find some way in which advantages of such practice, if it has any, be preserved and augmented, and its disadvantages be eliminated.

SECTION IX. SUMMARIZATION OF PRECEDING SECTIONS

I have endeavored to generalize the recorded opinions and decisions, the principles involved and the fundamentals that are related to the general question. I trust I have established the following points:

1. Every state of the union has enacted a law governing the conditions under which an individual can legally practice medicine.
2. Every state demands that the individual obtain a license and specifies the requirements that must be met ere he is eligible to secure a medical license.
3. Every state provides for the penalization of the individual who practices medicine without a license.
4. Every state provides for the revocation of a licentiate's license whenever he is found guilty of certain practices that are defined under the general term of "unprofessional conduct."
5. Every state law stresses the individual, a personal entity, "he or she."
6. No state law includes any provision for the issuance of a single or blanket license to a corporation or an associated group authorizing such group or corporation to legally engage in the practice of medicine.
7. Federal and State Supreme Courts have handed down numerous decisions that license to practice medicine, law or dentistry is not a common property right, an unconditional inherent right of a citizen as defined in the fourteenth amendment.
8. Federal and State Supreme Courts incontestably hold that the state, under its police power rights, may enact regulatory measures for the protection of the public.
9. Corporations exist only in legal contemplation. They are impersonal entities endowed with certain personal powers.
10. A corporation cannot act illegally and inasmuch as a corporation cannot obtain a license it cannot practice medicine for that would be illegal, for a license is imperative for legal practice.

SECTION X. UNTOWARD CONDITIONS THAT WILL ARISE IF CORPORATIONS ARE EMPOWERED TO PRACTICE MEDICINE

I shall briefly relate ethical and actual factors that should abet the resistance to consenting to or condoning corporate practice of medicine.

It is an accepted legal rule that the relationship of patient and physician must be confidential and inviolate. The reasons for this rule are apparent but cannot be observed in corporate practice.

Our accepted Principles of Ethics sets forth the following:

Principles of Medical Ethics of the A. M. A.:

Sec. 2, p. 19.—It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

It was well set forth in the California brief that corporation practice of medicine would be inimical to public welfare for the following reasons:

"If, in the last analysis, corporations are allowed to practice medicine as a general proposition, it is the opening wedge to the commercialization of the practice of the learned profession of medicine, and permits the creeping in of many unethical and uncontrollable factors which the law has heretofore sought to avoid. One of the main objections to allowing a corporation to practice medicine would be unquestionably the inability of the state to control the practice of medicine by a corporation as it does control it now under the Medical Practice Act, as each member of the profession comes directly under the Medical Practice Act and the corporation herein does not. Unprofessional conduct on behalf of the corporation could not be reached, such as aiding in or betraying a professional secret, advertising, or offenses involving moral turpitude, and many others too numerous to mention."

The legal profession, were corporate practice of law legalized, would still have a remedy to control and prevent questionable practice and conduct which would not pertain to corporate practice of medicine. Lawyers who are admitted to practice are officers of the courts. Their conduct and practices are under court supervision and control. Lawyers are amenable to Court discipline. Lawyers are therefore in a different category from physicians. State boards do not have this jurisdiction to supervise and control doctors.

SECTION XI. CONCLUSION

I believe that the following conclusions are warranted: Corporate practice of medicine, legalized, would be tremendously inimical to the people, state and nation. It would exert a detrimental influence upon the progress of scientific medicine and medical education. It would reduce a profession to a trade occupation, thereby sacrificing all our sacred traditions, and debase the art of medical practice. It would terminate the sacred relation of patient and physician. Corporate practice of medicine should not be condoned, tolerated or abetted. Such an invasion in the social life of the people should not be consummated.

SECTION XII. RECOMMENDATIONS

1. That every State Board and Medical organization discourage any and all movements having for their purpose the institution of corporate medical practice.
2. That all State Boards and Medical organizations exercise every legitimate influence to defeat legislation intended to legalize corporate medical practice.
3. That we join with the professions of Law and Dentistry in circumventing any such invasion of learned professions by corporate bodies or groups.
4. That every State Board deny any and every application, filed by a corporation to secure a license to practice medicine and defend their position vigilantly and strenuously through the courts of last resort.
5. If this Federation concurs in the presentation and facts herein contained, that this report be adopted and acknowledged as an expression of policy that will be assumed and defended.

SECTION XIII

I bespeak your indulgence of my inability to have confined the discussion to a more limited verbiage. The voluminous references that were reviewed precluded attaining such desirable limitation. The temptation was to enlarge upon specific cases, cite the actual words of learned judges and to quote from law texts. To have done so would have been a travesty upon your patience. For similar reasons I omit a lengthy list of references which are, however, available. Lastly, I acknowledge that I have lifted, en toto, many sentences and paragraphs from some of the consulted references and authorities and the comments advanced by the Bureau of Legal Medicine and Legislation of the A. M. A.

SEPTIC ABORTION ASSOCIATED WITH MENINGOCOCCIC MENINGITIS

WALTER E. LARSON, M.D., and BERNARD H. STARMANN, M.D.†
WYANDOTTE, MICHIGAN

The association of a case of septic abortion and epidemic meningitis is in our opinion worthy of discussion. The history of this case is rather meager as to exact details of the onset of the abortion. Although positive information of actual inducement of abortion is lacking, certain information indicates that this occurred. Attempts to find out yielded no definite information as to the facts.

The patient was a married woman, twenty-three years of age. with one living child, and gave no history of previous miscarriages. On January 7, 1932, she began to complain of severe cramps in the lower abdomen associated with moderate vaginal bleeding. At this time the temperature was normal and the patient was treated conservatively in such manner as to prevent the abortion. She had a history of a three months' amenorrhea associated with usual presumptive signs of pregnancy. On January 8, 1932, the family physician was called and the patient was found to have had a severe chill, with a temperature of 105 degrees. At this time bleeding was quite profuse. On January 9, 1932, the fetus was expelled and throughout that day the temperature was normal. On the evening of January 10, 1932, the patient complained of severe headache. She was admitted to the Wyandotte General Hospital on January 11, 1932, and was found to be very drowsy and lethargic.

The physical examination revealed a well developed, well nourished, white female adult lying quietly in bed, whom efforts to rouse were unsuccessful.

Head: Negative. Neck: Rigid. No adenopathies. Thyroid not palpable. Eyes: Pupils were equal and regular and reacted sluggishly to light. There was a converging strabismus of the right eye. Ears: Drums normal. Mouth: Teeth good. Tongue moist and not coated. Pharynx not injected. Nose: No deviation of septum. Mucous membranes normal. No obstruction.

Chest: Percussion note was resonant throughout. Breath sounds vesicular in character. No râles or rubs were heard. Respirations were 26 per minute.

Heart: The cardiac area as elicited on percussion was normal. Apex impulse not visible but normally palpable. Heart sounds were forceful in character, and regular in rhythm. No murmurs were heard. The radial pulse was 100 and bounding in character. Blood pressure was systolic 130, diastolic 90.

Abdomen: Slightly rounded. No muscle spasm nor rigidity. The liver was not enlarged. The spleen was not palpable. In the left lower quadrant was found a firm rounded mass rising from pelvis which on bimanual examination was found to be the uterus. This extended half way up to the umbilicus. No other masses were felt.

Pelvis: There was a very foul smelling sanguinous discharge from the vagina. Pelvic examination under aseptic precautions revealed uterus to be enlarged as previously noted. In the cervical os was palpated friable tissue, probably placental in origin. Cervix was soft but contracted down on the tissue.

Extremities: Negative.

Reflexes: Neck was markedly rigid; Brudzinski's sign was moderately present; Kernig's sign was positive; biceps and triceps reflexes were normally present; knee jerks could not be elicited on either side; umbilical reflexes were absent; Achilles reflexes were normally present; plantar reflex absent; Babinski reflex not present.

At this time the laboratory findings were as follows: Blood: Hemoglobin, 80 per cent; white blood count, 24,000; polymorphonuclear, 90 per cent; small lymphocytes, 10 per cent.

Urine: Acid in reaction. Specify gravity 1.015. Albumin 1 plus. Sugar, negative. Casts, few hyaline. Occasional pus and red blood cell.

In spite of the multiplicity of findings the patient's general condition was thought good enough to withstand operative interference.

As soon as a diagnosis of meningitis was made from the findings of the physical examination, a spinal puncture was done in the usual manner. The fluid was found to be under slightly increased pressure. It was turbid. At the time of this initial puncture 25 cubic centimeters were withdrawn and 15 cubic centimeters of antimeningococcic serum introduced slowly into the spine. An immediate cell count and smears were made and stained by the usual Gram method. The cell count was found to be 4,160, practically all polymorphonuclear leukocytes. In the smears obtained at this time numerous Gram-negative diplococci were found both intra- and extracellular. These were identified as the diplococcus meningitis.

The patient was then taken to the operating room and the cervix dilated and gross pieces of tissue removed, with a production also of a foul purulent discharge. No attempt at curettement was done and an iodoform gauze pack was inserted.

That same night our diagnosis, having been established after desensitization by 0.2 cubic centimeter doses intradermally and two 2 cubic centimeter doses intramuscularly, 15 cubic centimeters of antimeningococcic serum were given intravenously, and 1,000 cubic centimeters of a 10 per cent glucose solution in sterile water was given intravenously.

The next morning a spinal puncture was done again and 45 c.c. of turbid fluid was withdrawn, samples of which were sent to the laboratory for a cell count, and two drops were collected on culture media. Thirty c.c. of serum were given intraspinally at this time.

The report from the laboratory on this material was a cell count of 5,100, mostly polymorphonuclear leukocytes. The following day the culture of spinal fluid showed a pure strain of meningococcus. On the same day a blood culture was taken which showed a pure strain of meningococcus; no other septic organism was present other than the meningococcus.

At this point all concerned became very interested. We began to wonder if it were not possible that the infecting organism causing the septic abortion could possibly be the meningococcus. A consultation of

†Dr. Larson and Dr. Starmann are resident physicians at the Wyandotte General Hospital.

members of the staff was held as to the advisability of taking cervical smears at this time. It was decided that as long as we had still some hope of her recovery we should not do so at that time. Orders were sent, however, to the pathology department to take special care in the examination of the placental fragments removed at the dilatation and curettage for the presence of organisms.

That same afternoon the patient showed signs of increased pressure again, namely, slowing of pulse, which became of the strong bounding type. A tap was repeated at this time for drainage and 25 c.c. of fluid removed. Again that night the tap was repeated and 20 c.c. removed and 15 c.c. of serum given into the spine and 1,000 c.c. of 10 per cent glucose in sterile water intravenously.

On the morning of the second day a spinal puncture was performed and the fluid was found to be only under slight pressure, but was still very turbid; 20 c.c. were removed and 15 c.c. of serum given. It was decided, since the patient still showed symptoms of increased pressure after this tap, that we possibly had some form of blockage. Accordingly that afternoon a cistern puncture was done and 30 c.c. of turbid fluid under quite marked pressure obtained; 15 c.c. of serum was slowly introduced directly into the cistern.

That evening 15 c.c. of serum was placed in 1,000 c.c. of 10 per cent glucose in sterile water and given intravenously. The patient showed no marked improvement and expired at 2:30 a. m. on the morning of the third day.

Immediately after pronouncing the patient dead a vaginal speculum was introduced and three smears taken from the cervix, which were sent to the laboratory for examination. These all three showed numerous Gram-negative bacilli and more numerous yet Gram-negative diplococci, identified as the meningococcus. No streptococcus, no staphylococcus were found.

On the second day of the illness, a second blood culture was taken to check on the first. This likewise showed a pure growth of the diplococcus meningitis.

The report from the pathological department on the tissue removed at the dilatation was, that the tissue was placental in character. No organisms were demonstrated by the usual methods in the tissue.

CONCLUSIONS

1. We have a case of abortion (probably induced) taking place on January 7, 1932. On January 8, the patient had a severe chill and expelled the fetus on January 9, followed the next day with fever, headache and chills. Undoubtedly a true septic abortion.
2. On January 11, we have the patient admitted to the hospital with definite symptoms of a meningitis, proven by clinical and laboratory means to be of the epidemic form.
3. We have two blood cultures taken during the illness showing a pure growth of meningococcus.
4. We have cervical smears, showing meningococcus as the only septic organism present in that location.

We, the writers of this report, do not claim that we have positive proof that the entrance of the organism, the meningococcus, was by way of the cervix through the abortion with the meningitis showing up secondary, but we do feel it to be a very probable conclusion. We considered the case a very interesting and speculative one and offer it for that reason.

A PLEA FOR THE PRELIMINARY IRIDECTOMY

J. G. HUIZINGA, M.D.
GRAND RAPIDS, MICHIGAN

It is generally conceded that the preliminary iridectomy before a cataract operation has certain outstanding advantages that should make a strong appeal to the younger surgeon or to those of more limited experience even if they are older.

The more experienced surgeons may be trusted to work out their own salvation along a line of technic that will best answer their purpose. And yet, most of our more experienced men readily admit its advantages and only fail to practise it for reasons of expediency, but not for reasons of better judgment. Practically every one will admit if he were to have an operation on his own eye he would prefer to have the preliminary iridectomy performed about four or six weeks preceding the regular cataract operation.

The chief disadvantages of having two operations at two separate settings instead of the combined single operation are two: viz., the element of time and the increased menace of infection from two exposures to this danger. On the other hand, the advantages are so well accepted as to deserve utmost serious consideration even by our more competent men. These advantages may be briefly comprehended under six main heads:

I. The preliminary iridectomy gives the surgeon a perfect index of the patient's reactions to surgery on the eye.

a. Psychically: Surgeons will ascertain whether or not the patient is controllable, temperamental, nervous or fidgity.

b. Whether there is hypersensitivity to trauma or infection and whether the

recovery is uneventful or delayed by pains and excessive reactions.

II. It stimulates the patient's faith in his surgeon and confidence in himself. If the preliminary operation is painless and readily recovered from, he will welcome the second one instead of anticipating it with a fearful dread that in some cases approximates a serious shock.

III. It wonderfully simplifies and shortens the second operation and surgeons can do better work.

IV. If there is any hidden tendency to glaucoma, excessive hemorrhage or other complications, it will most likely manifest itself at the time of the first operation.

V. There is less danger of iris inclusion in the corneal wound.

VI. Generally the only hemorrhage present in an ordinary cataract operation is from the iridectomy. The elimination of this by means of the first operation is exceedingly helpful in maintaining a clear unobstructed field during the subsequent operation.

VII. The final visual results are slightly better by this technic.

With the advantages so overwhelmingly in favor of the preliminary iridectomy, it is hard to understand why it has not been more generally adopted. It is fairly certain that if the advantages of the double operation were properly explained to the patient practically everyone would prefer it. The inconvenience of two operations is not to be compared with its increased safety, ease of technic and improvement of vision.

420 MEDICAL ARTS BUILDING

A DISLOCATION OF THE CARPAL BONES—THE SCAPHOID AND SEMILUNAR: REPORT OF A CASE

F. T. ANDREWS, M.D.
KALAMAZOO, MICHIGAN
(Roentgen Ray Interpretation by A. W. CRANE, M.D., Kalamazoo, Michigan)

In reporting this case, I was impressed by the rarity of the occurrence and the scarcity of literature, especially the treatment and manner of reduction of these dislocations. Also the ease in which they may be overlooked in the study of the roentgen ray when films taken in the anterior-posterior plane, stress one to insist upon a lateral-ventral view of injuries to the wrist joint.

Reduction of a dislocated lunate bone may often be accomplished immediately, or within a few days, by manipulation. If the patient is seen immediately after the accident, attempts should be made by manipulation to reduce the dislocation, which may be successful. Forced hyperextension of the wrist opens the space between the capitate and the radius; pressure is then made upon the anterior fulcrum, as a broomstick or a padded wedge-shaped block, over which the wrist is hyperflexed. In a majority of cases, the lunate may be forced back into position. A Thomas wrench may be employed for the purpose, one rod of the wrench over the lower extremity of the dorsum of the radius and ulna and the other over the displaced lunate bone; pressure is made in hyperextension and then the wrist is flexed with the pressure continued.

Jones has described a method for manipulative reduction by pressing on the upper edge of the dislocated lunate bone with the thumb of one hand, while the wrist is dorsiflexed and strongly extended by the surgeon's other hand. The wrist is gradually palmar flexed and the capitate is manipulated around the upper edge of the lunate. Care must be taken in such measures not to employ too much force, as there is danger of injury to other bones of the carpus with subsequent osteoporosis, or the median nerve may be traumatized. After reduction is accomplished, as demonstrated by the roentgen ray, a simple cock-up splint is applied, as there is no disposition to redislocation. Many surgeons prefer open operation, at which time either reduction or excision of the bone may be performed. On account of a possible subsequent traumatic arthritis or osteoporosis, many surgeons prefer excision in all cases. The author believes that the bone should be reduced in all cases in which there is sufficient ligamentous attachment to permit normal circulation. In

those in whom the lunate is practically separated, it is better to remove the bone, for a new circulation may not be established until there has been such organic change as to induce persistent disability with pain.

Surgical reduction is accomplished through an anterior incision in the midline.

Fig. 1. Showing normal relations of carpal bones.

The tendons of the flexor carpi radialis and the palmaris longus muscles are separated. The median nerve must be isolated and retracted inward; it is about the size of the largest tendon at the wrist, for which it might easily be mistaken. The lunate is prominent when dislocated and the dissection should be carried close to the bone. The lunate is levered into its normal position between the triquetrum and the navicular, after the former bed has been cleaned out and the wrist hyperextended. The lunate may be pressed into its normal position, or a special bone skid described by Speed may be employed. In those in whom there has been an elapse of two weeks or more, reduction has been accomplished with restoration of good function, but undoubtedly in such cases the best course to pursue is excision. The bone is grasped by a pair of rat-toothed forceps, dissected free of all adhesions, and removed. A few deep stitches close in the space occupied by the bone and the skin is closed. Pain is usually relieved and function improved materially, after excision. Almost normal function is regained in many instances while in others there may be more or less permanent disability. Much depends upon the degree of tenosynovitis, nerve injury and osteoporosis. When reduction is performed soon after the injury, either by closed manipulation or open operation, the results are good. In cases of long standing, the lunate should always be excised, as the functional results following excision are usually excellent.

Posterior Dislocation of the Lunate Bone.—Dorsal dislocation of the lunate (semilunar) bone may occur alone or associated with forward dislocation of the radiocarpal joint. It is exceedingly rare. The displacement is produced by forced hyperflexion of the wrist, with ulnar deviation of the hand. The symptoms are similar to those of anterior dislocation, but there is an enlargement visible upon the dorsum of the hand, if this is not obscured by swelling. The displacement may be suspected from inspection and palpation, but the diagnosis must be confirmed by the roentgen ray. Manual reduction is accomplished by manipulations, the reverse of those employed for anterior dislocations. If reduction can not be accomplished manually, surgical replacement is indicated through a dorsal incision.

Dislocation of the Navicular Bone.—Dislocation of the carpal navicular (scaphoid) bone is exceedingly rare and when present is usually backward. Recent dislocations may be reduced by direct pressure; if this is not successful, the bone should be excised. When the dislocation is of long standing the bone should always be excised.

CASE REPORT

Mr. J. D. C., traveling salesman, aged 38 years, complained of pain in the wrist joint and a sense of numbness of thumb, first and second fingers in the right hand.

The father and mother both died of tuberculosis at ages of 25 and 27. No brothers or sisters.

The patient was first seen at the home of his friends on the sixth of November. He stated he had been in an auto accident on October 30. His car was sideswiped by another car and turned over several times. He was thrown clear of the car and was unable to state the position in which he landed. He was not knocked unconscious. This occurred about 7:30 P. M. He was taken about twenty miles to a hospital where he received medical attention. Fifteen X-ray views were taken of various parts of the body and he was informed he had a fracture of both bones of the arm and three ribs cracked as well as numerous body bruises. The arm was placed in a plaster-of-Paris cast after reduction of fractures

under anesthesia. Adhesive tape supported ribs and pelvis. He remained in the hospital for two or three days, then at his request he was allowed to go to a hotel where he stayed for two days. He was then taken to a nearby town in an automobile, placed upon a train on which he arrived in this city the following evening. He was first seen at noon on the seventh day after the accident. His complaint has been noted above and it may also be added that he was pacing the floor from pain and nervousness

Fig. 2. Radiograph showing dislocation of scaphoid and semilunar bones, postero-anterior position.

and he said he had been unable to sleep the night before because of pain. He also stated his hand felt cold. The plaster-of-Paris cast extended from about four inches above the elbow to the middle of the fingers. The cast was split at the points which might have exerted pressure on the arm and hand and he stated it relieved him some. He was given a sleeping potion and asked to return the following day, which he did. He complained bitterly of the pain in his wrist joint and was advised to have the joint X-rayed. This was done and the dislocation was discovered.

X-RAY EXAMINATION (11-7-31)

Arm, elbow and wrist: Films were made of the arm, including the elbow and wrist joints, in the antero-posterior and lateral positions, with the cast in place excepting that the elbow was not obtained in the antero-posterior position.

We observe an impacted fracture at the head of the radius.

At the wrist there is a dislocation of the scaphoid and semilunar. The semilunar was displaced ventrally.

Four plates were taken at this time but as this was Saturday afternoon, the patient asked to be allowed to wait until Monday morning to have the reduction made. This was agreed upon and he was informed of his condition. He was advised that an attempt would be made to reduce the dislocation manually but an open operation would be done if this were not successful. Monday morning he was taken to the hospital, prepared for operation and lying on the X-ray table was administered gas anesthesia and the reduction attempted successfully. The maneuver was as follows: The forearm was grasped by an assistant. The hand was grasped as in shaking hands and a strong direct pull was exerted. The hand was then adducted and then sharply supinated, all the time exerting a strong

Fig. 3. Showing dislocation, lateral position.

direct pull in the angle in which the hand was carried. Pressure was exerted upon the carpal bones by the thumb of the left hand. The scaphoid was felt to go back with a sharp snap but it was necessary to repeat this maneuver to reduce the semilunar, which also snapped into position. The hand was X-rayed and the bones found to be in perfect alignment although an unusual space remained between the semilunar and scaphoid. The forearm and hand were placed in a moulded metal splint which extended beyond the finger tips and the arm carried in a sling.

The patient had considerable pain in the wrist joint for two days and then splint was removed and diathermy treatment daily for four days. He was then allowed to return to his home feeling very much improved with no apparent deformity of the wrist joint.

REFERENCE

Lewis, Dean: Practice of Surgery.

NEUROLOGIC AND PSYCHOPATHIC MANIFESTATIONS OF PERNICIOUS ANEMIA*

CHARLES KIELY, M.D.†
CINCINNATI, OHIO

It is a pleasure to discuss or perhaps rather to speculate on the cord lesions that accompany pernicious anemia. The clinical diagnosis is often first suspected from the neurological symptoms, and secondly the relations of these to the blood changes though very speculative intrigue any biological interest.

According to Woltman[1] the disease is accompanied by neurological symptoms in from 50 to 80 per cent of cases, 30 per cent being neuritis and the remaining 50 per cent serious cord lesions. Interest in the latter arises from the great regularity with which two bilateral systems, judging at least clinically, are nearly exclusively involved. Predominantly the posterior tracts of a Goll and Burdach with the crossed pyramidal tracts in the lateral column undergo a progressive degeneration, and, leaving aside objections to be raised later, the clinical symptoms correspond well enough to such lesions. From the columns of Goll and Burdach we expect such ataxia as is seen in tabes; from the crossed pyramidal tracts the spasticity that occurs in a much rarer disease, lateral sclerosis. Clinically in pernicious anemia we see a neurological syndrome which combines the two and we teach our students to search further for pernicious anemia when they encounter a spastic ataxia. It is generally admitted that in one case the ataxic symptoms may mask their spastic opponents or vice versa, and Oppenheim[2] says that post-mortems explain the predominance by degeneration in the posterior columns outrunning that of the anterior or in reversal of that order. Thus is summed up the bare bones of our knowledge of the neurological lesions of pernicious anemia and from this point on we may justly proceed to study exceptions to the clinical picture, relation of pathology to symptomatology, and theorize about etiology.

Clinically the disease not infrequently begins as far as the patient has knowledge with paresthesias in fingers or toes. This fits well with Woltman's findings of 30 per cent showing neuritis, but not infrequently the first symptom is clumsiness in the finer movements of the fingers, buttoning, sewing, piano playing, or perhaps less frequently staggering due to ataxia in the legs or stiffness from spasticity. It is of great clinical importance that these subjective symptoms confirmed by objective findings such as finger-nose, heel-knee ataxia, exaggerated tendon reflexes and Babinski sign or some of its modifications precede by long periods the characteristic microscopic blood changes. On more than one occasion in our service in the Cincinnati General Hospital we have predicted from cord symptoms the onset of pernicious anemia at a time the blood picture was utterly normal. The admission must be made that this preceded the days when the crucial importance of achlorhydria was known. No doubt a gastric analysis would have made the prediction much less of a prophecy.

The literature shows some cases where a limitation of the disease process to a restricted level of the cord has produced a picture close to myelitis, but these are rare. Girdling sensations are not uncommon, but not accompanied by such severe pains as accompany tabes. Argyll-Robertson pupil has been reported, though very rarely, and justifies the postulation of coincident cerebro-spinal syphilis and P. A. Neither disease guarantees freedom from the other. Unscrambling such combinations need not keep the clinician awake at night.

When pernicious anemia is first diagnosed by the neurologist, he usually encounters a patient whose history is of tingling in the fingers or toes followed by ataxia as shown objectively in clumsiness of the fingers or ataxic gait, and the blood picture of frank or suspicious achlorhydria is present with rare exceptions. Lately, loss of vibration sense in the bones has been given great

*Presented before the Section on General Medicine, 11th Annual Meeting of the Michigan State Medical Society, Pontiac, September 23, 1931.

†Dr. Kiely is a graduate of the Medical Department of the University of Cincinnati, 1913, specialist in neuro-psychiatry, assistant clinical professor of neurology in the University, and assistant director of the psychiatric department of the Cincinnati General Hospital, and attending neuro-psychiatrist to the Christ Hospital, Cincinnati, and to the St. Elizabeth Hospital, Covington, Ky.

diagnostic importance. Loss of such sensation in the sacrum has been said to have great weight, but it is present in tabes by admission, and I believe as a result of 75 examinations with a tuning fork of standardized vibration that the importance of sacral vibratory loss is over-rated. I have seen an isolated loss of vibratory sense there in three cases of unquestionable neurosis and one of feeblemindedness. Pernicious anemia patients quite regularly show loss of vibration sense in the sacrum and lower bones, but there is nothing pathognomonic in the formula. Position sense of the fingers and toes is usually impaired, the tendon jerks are exaggerated, and Babinski's or other signs present.

I have twice seen pernicious anemia develop in patients diagnosed as neurotic. The one had a history of violet temper and financial extravagance that brought a complacent husband almost to ruin. She fell into the hands of Minot, who found achlorhydria in her and a son. In spite of the skepticism of myself and a professor of medicine, she ultimately ran the typical course and died. The second, a woman of life-long hypochondriacal complaining, unexpectedly had her legs give way on an unfinished road-bed of broken rock. In view of the previous history, her subsequent complaints were ascribed to a traumatic neurosis. Quite suddenly she developed the clinical picture of pernicious anemia and subsequently died.

Considering the enormous number of whining, extravagant, and bad tempered women one encounters clinically I can only conclude that the pernicious anemia was a coincidence in both cases and no neurotic symptoms attachable to pernicious anemia can be postulated. Also there is no psychosis pathognomonic of the disease. Davidson and Gulland[3] report two patients in each of whom exacerbation of pernicious anemia was preceded by psychotic episodes. From the literature they conclude that no characteristic psychosis accompanies pernicious anemia.

Pathological examination of nerve tissue from cases of pernicious anemia roughly coincide with the clinical symptoms, but give rise to several clinical-pathological contradictions. Largely, we find degeneration of the columns of Goll and Burdach and the pyramidal tracts, but some anomalies appear. One must trace a degenerated tract to its cells of origin to find the most likely source of the trouble. For the pyramidal tracts these would be the Betz cells in the cortex and cytological examination shows them to our great satisfaction in a state of degeneration. Likewise the cells of Clarke's column in the spinal cord are atrophic and the cerebellar tracts to which they give rise sclerotic so that ataxia is well explained. On the other hand the columns of Goll and Burdach are quite regularly involved (Adami,[4] Collier[5]) but there is not, as in tabes, any lesion of the sensory radicles as they enter the cord in spite of similar radicular pains and constricting paresthesias, and further the cells in the sensory ganglia giving rise to the tracts in question are unaffected. Correlation of symptomatology and pathology in pernicious anemia is in much the same boat as in disseminated sclerosis. In that disease, pathology is found without symptomatology and vice versa: Spasticity without lesion of the pyramidal tracts, lesions of the pyramidal tracts without history of spasticity ante-mortem. The only definite correlation found is disseminated lesions with disseminated symptomatology. One can say of pernicious anemia that spastic ataxia is usually present ante-mortem and degeneration of the posterior and lateral columns post-mortem.

Some further pathological observations need to be added. Myelitic degeneration precedes axonal. The degeneration begins in the center of the affected tracts and spreads outwardly. The process begins in the dorsal portion and spreads up and down, sometimes as far as the internal capsule. The cord is edematous, not shrunken. Davidson and Gulland[3] regard the tract degeneration as primary and atrophy of Betz and Clarke's column cells as secondary. Karsner[6] reports slight atrophy in the fronto-parietal lobe. Davidson[7] saw no difference in treated and untreated except slight glial response.

Speculation on the relation of the anemia to the cord change raises some interesting points. The first is whether the anemia is their direct cause. In favor of this opinion is the occurrence of the combined systemic cord syndrome in the anemia of other diseases. Profound secondary anemias sometimes cause it. I have seen one case with gastric and one with uterine cancer and the literature contains many such instances. The validity of the argument is attacked by the supposition that toxins of the malignant

growth cause both anemia and cord changes. Furthermore, experimental anemia fails to produce in animals the expected cord changes. Hemolytic toxins, B. Welchii, phenylhydrazine and hemolytic sera have failed to affect the cord. Another fact against this theory is the failure of cord changes to remit with the blood picture. Just before the day of liver therapy the Cincinnati General Hospital was equipped with a department of heliotherapy for treatment of tuberculosis and many cases of pernicious anemia were also subjected to months of light exposure. Lasting remissions or perhaps cures of the blood picture were produced without affecting the cord symptoms except in one case.[8] The duration of the anemia must be considered in evaluation of this argument. The blood system is capable of extended regeneration, the nervous system of very little and stands continued injury very badly. Possibly earlier treatment of the anemia would have saved the cord before irreparable damage was done, but no such correlation appears in the series treated by heliotherapy.

Against anemia being the direct cause of cord changes is also their frequent appearance before the anemia and the occurrence of the combined systemic syndrome in cases not showing anemia of any kind. Such instances no doubt are rare, but unknown causes produce the syndrome and Oppenheim reports one case in paresis and quotes Zahn's cases of familial combined systemic sclerosis.

The postulate that a common toxin causes the blood, cord, and gastric changes can be best defended. Gulland presumes that some patients have a susceptible nervous system which shows changes before the toxin has done enough liver damage to evoke the megaloblastic response of bone marrow. This hereditary predisposition seems less of a deus ex machina when we remember that a gastric predisposition is well substantiated. Blood relatives of the patients have again and again shown achlorhydria. This also explains the failure of cord symptoms to remit with the blood, for one can postulate that the pressure of the toxin is enough relieved to make the megaloblastic response unnecessary, but not enough to spare the nervous tissues. This also explains cases of combined systemic sclerosis with anemia at any stage. The toxin never becomes virulent enough to affect anything but the susceptible nervous system.

Gulland feels that the postponement of death from anemia by liver therapy has already demonstrated the susceptibility of the nervous system and that we will see a higher proportion of cord involvement than before.

With the advent of something deserving the name of a cure for pernicious anemia, the neurologist would predict remission of the cord symptoms to depend on the length of their existence before the initiation of therapy, but reports of the efficacy of liver in giving such relief are contradictory.

Minot, Murphy, and Cornell saw little result, but Ungley and Suzmann[9] report eight cases back at work of thirty who entered hospital, bed-ridden. Starr[10] reports eight cases without any improvement in cord symptoms. Richardson[11] saw four cases of moderate and eight of complete clinical improvement out of fourteen showing ataxia. In his whole series, sixty-seven cases, he has never seen ataxia develop in the face of treatment. (Length of observation, 6 to 24 months and up.) Krause[12] reports all of four cases progressing to paralysis in spite of improved blood picture. Curschman[13] reports two with the same result.

Ungley and Suzmann[14] present a later report. Of 30 cases treated with liver, 17 have improved, 8 are stationary or worse, and 5 died; of 31 in whom liver was not used, none improved, 3 were stationary or worse, and 28 died. They have not analyzed for correlation between duration before treatment and therapeutic result, but conclude that insufficient liver administration is demonstrable in the unimproved cases. That delay in commencing liver therapy permits irreversible changes to establish in the spinal cord seems a defenceless postulate in the face of the frequency with which combined systemic sclerosis has begun and progressed after the initiation of liver therapy in adequate amounts. Ungley and Suzmann think that the amount of liver necessary to bring the blood picture to normal is not enough to spare the nervous system which would require the continuance of full doses of liver after improvement in the blood picture.

My own experience with cases is as follows:

Case 1.—A female (Mrs. S.), of fifty, suffered from gastric upsets for twenty years and in March,

1930, began to notice disturbance of gait. She was treated for change of life for six months, and when brought to the office was too ataxic to walk unaided. The clinical picture was typical in every way. She had two months bed rest with ventriculin and dilute hydrochloric acid. The blood and nervous systems improved *pari passu* and since February, 1931, she has been coming to the office in a street car, unaided. At the present time a slightly broad-based gait and station is the only remnant of her ataxia.

Case 2.—Lily S., aged forty years, had suffered from "acid mouth" and raw tongue for more years than she can estimate. On January 19, 1929, following extraction of some teeth, she suffered from what was probably an hysterical interlude rather than truly organic nervous symptoms, for she had a feeling of great weight placed upon her and terrible mental agony and thought her bones were splintered and coming through the flesh. There were also episodes of tightness in the throat and with difficult breathing (globus hystericus or laryngeal crisis). She was not up and around until May of that year and then noticed difficulty in walking. It was two years later that I first saw her; the ataxia was extreme. She walked with the aid of the furniture and came downstairs backwards, holding to the railing. Blood and spinal fluid were negative for lues and the clinical and laboratory examinations typical for pernicious anemia. With ventriculin the blood picture has come to normal (September, 1931), but the ataxia is so slightly improved as to be negligible.

Case 3.—Mrs. L. B. S. This is perhaps the most interesting case. In 1918, the patient had a so-called "break-down" and could not walk. When seen in 1924, she presented the typical picture of combined systemic sclerosis with pernicious anemia. For four years her cord symptoms aggravated very slowly and the blood count got below four million only once. In 1928, she began to eat raw liver and had a lasting remission of her neurological symptoms that leaves her with only a slight ataxia.

The following conclusions seem justified: The cord symptoms are the result of a directly acting toxin rather than the anemia. Admitting exceptions, the Betz cells and their axones in the pyramidal tracts, the cells of Clarke's column and their axones in the cerebellar tracts, and the columns of Goll and Burdach (without involvement of their cells of origin in the dorsal nuclei) are habitually degenerated. The selectivity for these systems remains unexplained. Treatment with liver extract frequently relieves these symptoms, but often does not. That a dose sufficient to relieve the megaloblastic response can be too little for the cord symptoms, is a valuable postulate.

BIBLIOGRAPHY

1. Woltman, J. H.: Am. Jour. Med. Sc., 157:400, 1919.
2. Oppenheim, H.: Text Book of Neurology. Foulis, Edinburgh and London, 1911.
3. Davidson, L. S. P., and Gulland, C. L.: Pernicious Anemia. Mosby, St. Louis, 1930.
4. Adami, J. G., and Nichols, A. G.: Principles of Pathology. Lea and Febiger, Philadelphia and New York, 1911.
5. Collier: Pierce's Text Book of the Practice of Medicine. Oxford Med. Science, 1930.
6. Karsner, H. T.: Human Pathology. J. B. Lippincott, Phila. and London, 1926.
7. Davidson, S.: Edinburgh Med. Jour., 35:322, June, 1928. Davison, C.: Jour. of the Pro. Soc. for Exp. Biol. and Med., 28:6, March, 1931.
8. Heuer, G., and Schwartz, P.: Med. Bull. Univ. of Cincinnati, 5:1:32.
9. Ungley, C. C., and Suzman, M. M.: New Castle Med. Jour., 9:67, 1929.
10. Starr, P.: Jour. A. M. A., 96:15, April 11, 1931.
11. Richardson, W. New England Med. Jour., 200:540, March 14, 1929.
12. Krause, F.: Klin. Wochensch., 8:2177, Nov. 19, 1929.
13. Curchman, H.: Med. Klin., 25:1767, Nov. 15, 1929.
14. Ungley, C. C., and Suzman, M. M.: Brain, 52:271, 1929.

MYASTHENIA GRAVIS FOLLOWING ELECTRICAL SHOCK*

F. G. LINDEMULDER, M.D.†

ANN ARBOR, MICHIGAN

Myasthenia gravis, first described by Wilkes in 1877, is a disease characterized by muscular exhaustion. The affected muscles are weak and easily fatigued. Neither age nor sex has any bearing on the disease. The face is often expressionless, the eyelids droop, and there results a "sleepy" appearance. Complete rest frequently fails to restore normal muscle tonicity. The case herewith reported is of special interest because of the mode of onset as well as the prognosis and treatment.

M. B., a female, sixteen years of age, was admitted to the neurological service of the University Hospital on April 1, 1931. She complained of weakness, difficulty in talking and swallowing, headache, and gastric distress. The illness is said to have dated from the previous autumn. At that time she was clerking in a store and had accidentally received a rather severe electrical shock. She took hold of two conductors that were carrying an electric light current of 110 volts and was unable to release her grasp. She continued to receive the current for some minutes before it could be turned off. Ever since this accident, she had been weak, nervous, and after slight exertion fatigued easily. Just prior to admission, liquids had a tendency to regurgitate through the nose, and it was difficult for her to hold her mouth closed. These symptoms were made worse if she continued eating. She was unable to walk more than two blocks because of progressive weakness. In raising the arms over her head to

*From the Neurological Service of the University of Michigan Hospital, Ann Arbor, Michigan.

†Dr. Lindemulder is a graduate of the University of Michigan Medical School, 1928, and has been associated with the University Hospital since that time. His present capacity is Instructor in Neurology at the University Hospital and Medical School.

comb her hair, they would tire quickly. First, the right eyelid drooped and later the left, so at times the eyes were closed completely.

During childhood, the patient had diphtheria, scarlet fever, mumps, whooping cough, and in 1929, smallpox. The family history was irrelevant.

Fig.1. Bilateral ptosis with expressionless, apathetic face.

On examination, the patient's gait was not impaired. She was well-nourished and not acutely ill. She replied promptly to questions and was normal mentally. There were no localized atrophies or deformities. The voice, which had a marked nasal tone, became aphonic after talking for a short period of time. There was bilateral ptosis, which was more marked on the right side than the left. The face was expressionless and apathetic (Fig. 1). The pupils were equal and reacted to light and in accommodation. The extraocular movements were normal and there was no nystagmus. There were no cranial nerve palsies; however, the masseter muscles failed to respond after ten contractions. The deep tendon reflexes were brisk, equal, and did not fatigue. There was no impairment of sensation. The heart was not enlarged, the rate was regular, there were no murmurs, and the sounds were of good quality. The blood pressure was 122/80. The electrocardiogram demonstrated marked sinus tachycardia. The temperature was 98.6° F., pulse 120, and respirations 20. The urine was acid in reaction, the specific gravity was 1.020, and tests for sugar and albumin gave negative results. The sediment contained 10-15 pus cells and no casts or red cells. The Kahn reaction on the blood was negative. Peripheral examination of the blood showed hemoglobin, 85%; red cells, 5,250,000; and white cells, 7,100. The blood non-protein nitrogen was 32.5 mgms. per 100 c.c.; the sugar was 83 mgms. per 100 c.c.; the creatine 4.5 mgms. per 100 c.c., and creatinine 1.6 mgms. per 100 c.c.

Roentgenological studies of the gastro-intestinal tract and chest showed neither evidence of organic disease nor the presence of a persistent thymus.

Following bed rest and oral administration of ¾ grains of ephedrin sulphate three times a day the heart rate was decreased, although the electrocardiogram still demonstrated a sinus tachycardia. The patient became asymptomatic and was discharged from the hospital. Within a month, the symptoms returned, the remission having lasted for three weeks. Later, when the patient's condition was considerably worse, she was in an auto accident, following which she became asymptomatic for a period, only to have another relapse.

In September, 1931, upon seeing the patient, it was found that her condition was worse, in that there was a marked loss of weight in addition to her previous symptoms. This probably was due to anxiety as well as her inability to take nourishment.

Various therapeutic agents have been tried, including ephedrin sulphate, arsenic, strychnine, thyroid, etc., but the best results were found after complete rest and prevention of fatigue.

DISCUSSION

Myasthenia gravis is characterized by muscular weakness without paresis or true paralysis. The affected muscles become readily fatigued and weak, the weakness frequently persisting after complete rest. The face often is expressionless with drooping eyelids and a "sleepy" appearance. In speaking, the voice gradually becomes nasal and indistinct. Remissions frequently occur. In this case, the muscles of mastication, deglutition, speech, levator palpabræ and orbicularis oculi were chiefly involved.

It is necessary to take into consideration a number of conditions in diagnosing a case with these symptoms. Post-diphtheritic palsy and pseudo-bulbar palsy are readily excluded by the history, and the same is true of so-called apoplectic bulbar palsy. The muscular dystrophies and atrophies give a somewhat similar appearance to the face but they do not cause difficulty in swallowing or a rapid recuperation of muscle weakness after a short period of rest. Syringobulbia and brain tumor pressing on the medulla oblongata might give rise to the bulbar symptoms, but the other signs of these affections are absent. Syphilitic disease of the brain might be thought of but there are no signs of syphilis. Chronic polioencephalomyelitis may be difficult to differentiate, but there was no atrophy of the muscles involved and remissions were present.

The etiology of the disease is a matter of speculation. Buzzard found what he called "lymphorrhages" in the skeletal muscles and in other organs. Keschner and Strauss believe that in 50 per cent of the cases these are found. It is thought that auto-toxemias in certain types of constitutions, chronic infections, tumor, toxins, or persistent thymus may be the cause of the disease. Some cases have followed encephalitis.

The most important therapeutic agents in the treatment of myasthenia gravis are complete rest and removal of focal infections. When there is difficulty in deglutition, the patient should be spoon or tube fed. Rectal or intravenous administration of glucose may be advisable. Ephedrin sulphate (⅜ to ¾ grains) three times a day has given some relief of symptoms. Strychnine, arsenic, thyroid and other glandular extracts have all been used with varied results. The disease is characterized by spontaneous remissions, which may explain the variations observed.

The prognosis is grave. Rarely is there a complete recovery. Patients affected by this disease seldom live many years. Dr. C. D. Camp has had a case under observation for sixteen years. This, however, is extraordinary. Various therapeutic agents have been used, but the most infallible remedy during relapses has proven to be rest.

CONCLUSION

Apparently, the onset of the condition followed an electrical shock, yet this may have been only a coincidental factor. The chief therapeutic agent is the avoidance of fatigue and anxiety with the infallible remedy of complete rest during relapses. The prognosis of myasthenia gravis is grave, yet with proper surveillance some cases live many years.

BIBLIOGRAPHY

1. Buzzard, F.: The Clinical History and Post Mortem Examination of Five Cases of Myasthenia Gravis. Brain 28 (1905), 438-483.
2. Keschner, M., and Strauss, I.: Myasthenia Gravis. Arch. of Neur. and Psych. 17 (1927), 337-376.

THE DOCTOR'S LOG

WILLIAM J. STAPLETON, JR., M.D.
DETROIT, MICHIGAN

MAPS

Colored maps upon the wall
Do not mean a thing at all
To those who see but charted spaces,
Separating lands and races.

But maps to him who is traveling far
From homeland hearth to alien star,
Flash back a thousand storied gleams
Of desert, jungles, peaks, and streams.

For never a traveler's heart but flames
To read a map's enchanting names;
To him who's circled land and sea,
Maps are wings of wizardry.

—M. A. Beer in *Evening Post*, New York.

Last year, the first in ten, we did not go abroad, but decided to motor about our own country; we took our vacation in sections. A trip to Baltimore came first; then through our own State of Michigan, named by the Indians "Mich-sang-ye-gan," meaning "the Lake Country"; and lastly to the fascinating old Island of Nantucket.

The American College of Physicians had their last meeting at Baltimore, an ideal place for scientific gatherings. The very sight of Johns Hopkins recalls memories of the great men who made Baltimore famous all over the medical world. Named after Lord Baltimore, the city has a long and honorable history. My interest lies in books and medical history, so as soon as possible I visited the Welch Medical Library, the bearer of a message from Professor Karl Sudhoff of Leipsig to Professor Welch. I was most kindly received, and personally guided through this wonderful library and Institute of Medical History. Colonel Fielding Garrison, whom I had wished to meet for years, is now the librarian of the William Welch Library and lectures to the students of Johns Hopkins on Medical History. He is the author of the well known "History of Medicine" which is recommended as the best book in English on the subject. Another charming man connected with the Institute is John Rathbone, M.D., Ph.D., who is an authority on Medical History. We listened to very enjoyable talks by Doctors Welch, Garrison and Oliver. In the Great Hall of the Welch Medical Library is hung the famous painting by Sargent of "The Four Doctors"—Kelly, Welch, who still live; Osler and Halstead, who have passed to their reward. No doctor can think of Johns Hopkins without recalling these men and it is fitting to have their pictures enshrined in this beautiful building dedicated to books. One of my greatest pleasures in Baltimore was to hear Doctor Welch read aloud the words from Milton which are over the fireplace,

Our books are not absolutely dead things
But do contain a potency of life
In them to be as active as that soul was
Whose progeny they are
Now they do preserve
As in a vial
The purest efficacy
And extraction of that living Intellect
That bred them."

I returned again and again to the library to wander about. It is the only Medical Institute of its kind in the United States, a great monument to the man who made it possible, a man beloved by all who knew him, Dr. William Welch. A fine autographed etching hangs in my den and I shall always prize it highly. Johns Hopkins with its great collection of buildings and its old red front is a familiar sight to every medical visitor. In my mind's eye, I see the statue of "The Great Physician" standing with outstretched arms, and with the expression in his face which says, "Come unto me all ye that are heavy laden."

Edgar Allen Poe, that genius of American poetry, is buried in Westminster churchyard. It was here, while watching the night bombardment of Fort McHenry during the war of 1812 that Francis Scott Key wrote the national anthem—The Star Spangled Banner.

More than half the population of Maryland lives in Baltimore. It is unique in its blocks of red brick houses and white marble steps. We never go to Baltimore without paying a visit to the famous old Lexington Market, which takes up several city blocks.

Historic Mackinac Island, the objective of our Michigan tour, possesses a shrine for all doctors, for it was here in the old Fort Michilimackinac that William Beaumont, the army surgeon, was able through his experiments on Alex St. Martin to make his great discoveries in the physiology of digestion. I will not try to tell the story here for it is much better written in a little book by my good friend Dr. J. H. Dempster (the editor of the MICHIGAN STATE MEDICAL JOURNAL), entitled "Pathfinders of Physiology." Another illuminating article on Beaumont is the radio talk given by Dr. Haggard. The Michigan State Medical Society has placed a boulder in the grounds of the Fort with an inscription stating that near this point William Beaumont carried out his experiments. The face of this monument was replaced a few years ago by a bronze tablet bearing the same inscription.

On our way again and this time to Nantucket. We went by way of Niagara Falls on the Canadian side, through Brantford, where the telephone was born, and where one may see the home of Bell, the inventor. Our next pause was at Rochester to see the new University and Medical School. Besides being the home of the kodak, Rochester is a beautiful city. Central New York is intensely interesting historically, especially for its Indian legends. We crossed the Hudson at Albany, through the beautiful towns of Lennox and Stockbridge, and followed the Mohawk Trail to Waterbury. We followed the Connecticut valley to Providence and New Bedford, where one should visit the finest whaling museum in the United States. We drove around and up along Buzzards Bay, which recalls many memories of Cleveland and Roosevelt, and night brought us to Woods Hole.

In the elbow of Cape Cod nestles the former whaling village where science now delves into the secrets of marine life, and it is here many mysteries are solved. Here Jacques Loeb made his startling discoveries regarding the living cell. T. H. Morgan and his pupils traced the clues of heredity and made other important contributions. Conklin of Princeton, Jennings of Johns Hopkins, the Lille Brothers of Chicago, Osterhout of the Rockefeller Institute, Parker of Harvard, E. B. Wilson of Columbia, and Woodruff of Yale are some of the men, leaders in American biology, who have made of Woods Hole a mecca in the summer time for the scientific worker. The story of Woods Hole dates back to 1871, when Spencer F. Baird, secretary of the Smithsonian Institution, arrived there on a scientific mission. He was looking for a suitable spot to study North American fish. For ten years he stayed at Woods Hole, building a permanent laboratory and hatchery and later a dormitory.

Associated with Woods Hole is the name of the greatest of American teachers, Professor Louis Agassiz of Harvard, who was preparing to study life here. A tiny island called Penikise in Buzzards Bay was given him, and here in 1873 Agassiz established a summer school of natural history. Whittier's poem, "The Prayer of Agassiz" gives an account of the opening of the school and starting the courses while the carpenters were still at work. Agassiz died the following year and his son tried to carry on the

work, but the difficulties on this little island were too great. The first school was disbanded but the students in the first class—W. K. Brook, Alpheus Hyatt, David Starr Jordan, Charles Sedwich Minot and others—would not rest until another place was found. The result was the founding of the Marine laboratory at Woods Hole in 1888. This location was selected because of the fishermen's station and its desirability for the study of marine biology. Instead of the small wooden buildings of forty-three years ago, one now sees magnificent structures, quite like a college campus. There are some twenty buildings in all with an endowment of about three million dollars. Every summer investigators, professors and students come from all parts of the United States. The Marine Laboratory offers advanced instruction to a limited group, carefully selected from the best students of biology in American Universities. One hundred and forty students can be accommodated, but there are many more applicants. A splendid five-story building for the study of oceanography was opened a few weeks before our visit. Here ocean physicists, ocean chemists, meteorologists, and geologists and marine biologists are working to solve the secrets of the sea. The laboratories are busy places and at night they are brilliantly lighted as the students go about their work. Besides all these buildings, the institution has a research ship called the Atlantis, built through the generosity of the Rockefeller Foundation. The Atlantis is one of the most specialized ships afloat, being equipped with machinery for handling nets and studying the sea floor plus the study of fish, pressure, temperature, currents, and other problems of off-shore fishermen. This is the spot where biology is enshrined and the spirit of Louis Agassiz still hovers.

> "Said the master to the youth,
> We have come in search of truth,
> Trying with uncertain key,
> Door by door of mystery."

Leaving Woods Hole we went by steamer to Nantucket Island, the last output of the United States, thirty miles at sea. In the October, 1931, issue of the *Atlantic Monthly* is an interesting article entitled "Nantucket's First Cup of Tea" by Ruth Starbuck Wentworth, which describes early life on this island. The name Starbuck indicates the writer is a member of one of the oldest families of Nantucket. Another good preparation for visiting the island is to read the book by Mary Starbuck, "My House and I." Her father was the captain of a whaler and the writer's youth was bound up intimately with those brave years of Nantucket History. For a small island, Nantucket has much to offer its visitors, no matter what their tastes may be. The island is one of the best examples of how our forefathers lived.

The little town of Nantucket is a gem of early American architecture, with its famous Starbuck houses, the Whaling Museum, the Old Rotch Warehouse, the Pacific National Bank, the historic Old Mill built in 1746; the oldest house, the Coffin House built in 1686. These are but a few of the show places. I love the little Cape Cod houses one finds in the narrow lanes and streets. The houses are mostly of wood, weather-beaten gray in color, with painted green shutters, perfect in proportion, charming in the details of Georgian door frames and fan lights. On the roofs of the large houses are walks where the Captain's wife could go to watch for the return of her husband's ship after its long voyage to the Pacific. Nantucket dates back to 1672 and its history is filled with deeds of valor. Across the island over the moors of scrub oak and pine, green with bayberries, purple-gray with heather, moors which remind us of Scotland, lies the little seaside resort known as "Sconset" or "Siasconset." It is said to be one of the oldest resorts in America. It boasts a casino besides the Yacht Club and is a favorite gathering place for actors, artists, writers, golfers and just summer folks. There is an interesting school of lectures each season by distinguished persons held in what was formally the hayloft of a large barn, known as the "Tavern on the Moors." A delightful informality exists throughout the whole island. I had almost forgotten to mention Maria Mitchell, the first woman astronomer in America. In her youth she assisted her father, William Mitchell, a noted astronomer, and later made some important discoveries herself. Many honors were conferred on her and she became professor of Astronomy at Vassar College and Director of its Observatory. She was presented with an Equatorial telescope on behalf of the women of America. A tablet to her memory has been placed in the Hall of Fame at New York University.

Leaving Nantucket with its surrounding sea, one is reminded of the following quotation from Fielding:

"For my own part I confess myself so fond of a sea prospect that I think nothing in the land can equal it, and if it be set off with shipping, I desire to borrow no ornament from the terra firma, a fleet of ships is, in my opinion, the noblest object which the art of man hath ever produced; and far beyond the forces of those architects who deal in brick, in stone, or in marble."

Returning to Woods Hole, we journeyed on to Boston, "The Hub of the Universe," or, "The Athens of America." It has such a host of memories, historical and otherwise. However, there is one place of pilgrimage for every doctor in Boston Town —the Massachusetts General Hospital and The Ether Room at the top of the hospital, where in the operating room, on the 16th of October, eighty-five years ago, sulphuric ether was used as an anesthetic for the first time. What relief William Thomas Green Morton brought into the world of suffering humanity! It is all too difficult for us in these days to visualize the horrible operations of the days before, when attendants held down the extremities of agonized patients. See the place where pain was first banished by anesthesis.

The shore road to New York is delightful all the way, great broad highways, seaside resorts and little old New England towns with "greens" and band stands. Two years ago we drove into the ancient city of Avignon, France, the one time home of the Popes. On another day this year we stood in the city of New York, and through a drizzly rain looked up at the great groups of buildings which make up the new Medical Center. It was then that I realized what the writer in the *New York Times* meant by his title "Towers of Avignon on the East River." This wonderful group of buildings occupies three blocks lying just north of the Rockefeller Institute for Medical Research. Some of the buildings rise to a height of 350 feet, all overlooking the East River. The story of the planning and erection of these buildings is a fascinating one. Henry R. Shepley, who drew the plans, is a member of the firm of Coolidge, Bulfinch and Abbott of Boston, the architects of Harvard University and builders of hospitals all over the world. The Center consists of the Presbyterian Hospital of the City of New York, with this quotation over its entrance, "For of the Most High Cometh Healing"; the Sloan Hospital for Women; the Vanderbilt Clinic; the School of Medicine of Columbia University; a Nurses' Home; Nurses' Schools; buildings devoted to nervous diseases and other specialties of medicine.

Homeward bound. We proceed out Riverside Drive and along the Hudson River with its fine estates like the parks and palaces of the Old Country, through the Washington Irving country and the home of Edgar Allen Poe. Here, too, are the great reservoirs that supply New York with its water. The views up and down the Hudson River from the Storm King Highway, with the mountains towering in the distance, are truly magnificent. Continuing on through the "Finger Lakes Country" and "Far above Cayuga's Waters" we came to Ithaca, the home of Cornell University. From Niagara we retraced our steps through Canada and Home. Bliss Carman has described the joys of the road:

> Now the joys of the road are chiefly these:
> A crimson touch on the hardwood trees;
> A vagrant's morning, wide and blue.
> A shadowy highway, cool and brown,
> Alluring up and enticing down
> From rippled water to dappled swamp.
> The outward eye, the quiet will,
> From purple glory to scarlet pomp;
> And the strident heart from hill to hill.
> An open hand, an easy shoe,
> And a hope to make the day go through.

641 DAVID WHITNEY BLDG.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

NEWAYGO HEALTH DISTRICT

Another consolidated health district in Michigan has been placed in operation. The new unit is entitled the Newaygo Health District, and includes the three counties of Newaygo, Oceana and Lake. Temporary headquarters have been established in the court house at White Cloud. The unit is being financed by the following organizations: The Children's Fund of Michigan, the Rockefeller Foundation, the United States Public Health Service, the Michigan Department of Health and by each of the three counties.

The director of the new unit is Doctor Guy R. Post. Doctor J. B. Shumaker is employed as dentist and Mr. Carl Anderson is the sanitary inspector. The nurses are Mrs. Betty Hurt, Baldwin, Lake County; Miss Margaret Andrews, White Cloud, Newaygo County; Miss Clodia Johnson, Hart, Oceana County. The name of the clerk is to be announced later.

Doctor Post took charge of the unit on February 20 and is proceeding as rapidly as possible to complete plans whereby a good program of health work can be carried on.

The new unit of three counties now brings the total number of counties in the state receiving the services of full-time well trained health officers, to 28. Arrangements have already been agreed upon whereby Allegan County will be added to this list. It is expected that the Allegan Unit will be put in operation about April 1.

INFLUENZA

About the middle of February rumors came to the Michigan Department of Health that influenza was making its appearance in the state. The health officers of the principal cities and of the full-time district and county health departments were requested to report on the general situation in their districts. Fifty questionnaires were sent to these districts asking for information as to school attendance and number of cases and the nature of the infection as compared with other years.

In general the replies indicated that in many communities there was quite a sharp outbreak of upper respiratory infections, school attendance being reduced in some instances as low as fifty per cent. Illness was for the most part mild, of two to five days' duration and very rarely followed by pneumonia. Outbreaks in a given community usually subsided in a week or ten days.

These first reports indicated that there were quite a few small islands of infection widely scattered over the state; that within the territory of these "islands" the infection was present first among school children and followed soon by involvement of the adults and quickly dying out in that area but moving on to other districts. It does not appear that there are sufficient data to justify the prediction of an outbreak such as that in 1918.

CHILD HYGIENE ACTIVITIES

Dr. Ida Alexander and Miss Helen Linn, R.N., nutritionist, are conducting a series of Women's Classes in St. Clair County. There is an enrollment of 188 women in the county who each week attend these classes and learn about the care of the prospective mother, the newborn infant and the growing child. Dr. Muriel Case is conducting a similar series of classes in Ingham County with an enrollment of 308.

Miss Annette Fox, R.N., is conducting a series of Child Care Classes in Dickinson County, with an enrollment of 861 girls. Other classes in Child Care are being conducted in Van Buren County by Miss Bertha Cooper, R.N.; in Hillsdale County by Miss Nell Lemmer, R.N., and in Osceola County by Miss Beatrice Ferriby, R.N. The total enrollment for Child Care Classes conducted by staff nurses at the present time is 2,151.

Miss Martha Giltner has been transferred from the northern half to the southern half of Berrien County. She has completed five months of prenatal nursing in the northern part of the county and during that time has had 300 prospective mothers under her supervision, the majority of whom were referred to her by local physicians. Miss

Giltner will be located in the southern half of the county for five months. She was sent to do prenatal nursing in Berrien County at the request of the County Medical Society.

SWIMMING POOLS

During the past four years the Michigan Department of Health has taken an active interest in the operation of artificial swimming pools. Data have been collected on location, type, equipment and operation of all pools in Michigan.

On August 13, 1931, the State Council of Health adopted two pool regulations. One relates to the approval by this Department of plans and specifications for all new pools to be built after January 1, 1932, and the setting up by the Department of minimum rules pertaining thereto. These rules are now formulated and are contained in Engineering Bulletin No. 17.

The second regulation requires that a permit be secured from the Department to operate an artificial swimming pool after January 1, 1932. Permits are free, need not be renewed, but are revocable. The second regulation also requires that the Department set up rules pertaining to the operation and use by bathers and spectators of swimming pools. These rules are now printed and are contained in Engineering Bulletin No. 18.

There are three classes of pool permits, two unconditional and one conditional. Unconditional permit Class 1 will be given to those pools meeting all the requirements as outlined in bulletin 17. At present there are few pools qualified to obtain this permit. Unconditional permit Class 2 is given to a majority of the pools now in operation. To obtain such a permit the pool must meet the major sanitary requirements as set forth by the Department and fail in only one or two of the minor requirements. A conditional permit is issued to those pools of the "fill and draw" type, and to all other pools where operation is neglected or where they are lacking in pool water treatment equipment.

ENGINEERING BULLETIN NO. 14

Engineering Bulletin No. 14 has recently been revised and is now in the hands of the printer. It will probably be ready for distribution in about a month or six weeks.

The purpose of this bulletin is to show defects common in the construction of private wells, with suggestions for improved construction so as to avoid contamination reaching the well water from the top. It will consist of about 20 pages with eight illustrations.

Copies may be obtained by anyone on request.

RATS AS CARRIERS OF MEXICAN TYPHUS FEVER

Herman Mooser, M. Ruiz Castaneda and Hans Zinsser, Boston, recovered virus indistinguishable from the ordinary virus of tabardillo, or Mexican typhus fever, from the brains of rats trapped in Mexico City in locations where cases of typhus fever had occurred, and during a period in which a moderate epidemic of typhus fever was prevalent. This work is a direct confirmation of the evidence obtained indirectly through fleas by Dyer of the existence of a reservoir of typhus fever in rats and confirms the original suggestion made by Maxcy, in 1926, in regard to the epidemiology of the North American disease. The belief that the virus recovered from the rats is identical with that of Mexican typhus fever is based on typical reactions in guinea-pigs, with elevated temperature and testicular swelling, the presence of characteristic *Rickettsia*, immunity reaction and the development of Weil-Felix agglutination reactions in inoculated rabbits. The manner of possible transmission of the disease from rats to man is being investigated by an analysis of the insects found on the rats and in the houses where typhus fever has occurred. This work is being continued in Mexico City and will be reported on at a later date. Also, the frequency with which rats infected with typhus fever can be found cannot be judged until many more animals have been collected, this communication being merely in the nature of a preliminary report.—*Journal A. M. A.*

HOSPITAL TRAINING OF INTERNS

HAROLD L. FOSS, Danville, Pa., maintains that irrespective of how well organized the intern service may be and of how great the effort put forth by the heads of departments to render the training of the most practical value, the greatest accomplishment will not be achieved without a certain basic principle being borne in mind. The young physician fresh from the medical school and entering his intern service begins now to practice more of the science than of the art of medicine. He is in the most formative period of his existence, keen to learn, wide-eyed and enthusiastic, trusting and hopeful, relying tremendously on the guidance of his chiefs, so much so that it places a great responsibility on them the significance of which none too frequently bear in mind. The student acquires a sense for scientific work only in his student days, and the degree of scientific training and interest imparted to the young man in the medical school *(and hospital)* determines his intellectual level for the rest of his life. Clinicians should fully appreciate their obligations as teachers, realizing that their rôle is hardly second in importance to that of the men who have guided the student during his college years and that it is their privilege by their precept and example, by their opportunity to stimulate his latent enthusiasm, by the inspiration of their own personalities to afford him in the most important phase of his professional career that guidance so important in molding and shaping and directing his destinies to the end that his life becomes a failure or a success largely as the clinicians choose to make it.—Journal A. M. A.

THE JOURNAL

OF THE

Michigan State Medical Society

PUBLICATION COMMITTEE

J. D. BRUCE, M.D., Chairman.....Ann Arbor
A. S. BRUNK, M.D.....Detroit
B. H. VAN LEUVEN, M.D.....Petoskey

Editor
J. H. DEMPSTER, B.A., M.D.
641 David Whitney Bldg., Detroit, Michigan.

Business Manager and Editor County Society Activities
FREDERICK C. WARNSHUIS, M.D., D.Sc.
2642 University Avenue, St. Paul, Minnesota, and
Grand Rapids, Michigan

All communications relative to exchanges, books for review, manuscripts, should be addressed to J. H. Dempster, M.D., 641 David Whitney Bldg., Detroit, Michigan.

Reprints of papers published will be furnished authors at cost if the order is placed at the time the galley proofs are returned to the editor. *The cost of illustrations is to be defrayed by the author of the paper whether reprints are ordered or not.*

Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

All communications regarding advertising and subscriptions should be addressed to F. C. Warnshuis, M.D., 2642 University Avenue, St. Paul, Minnesota, or Suite 1508 Grand Rapids National Bank Bldg., Grand Rapids, Michigan.

APRIL, 1932

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon

EDITORIAL

DR. JUDD'S ADDRESS

Dr. E. Starr Judd, President of the American Medical Association, was the guest speaker at the Wayne County Medical Society, on February 16. In an address which we are privileged to print (page 243). he discussed the relation of the physician to the public. He emphasized the importance of the general practitioner not only in his capacity as attendant upon the sick, but also in the rôle of clinical research. It is the function of the general physician to apply the knowledge gained by research workers. They are no more qualified to make application of this knowledge than is the physician to attempt research work in the highly specialized laboratories.

Dr. Judd defines the function of the medical profession, namely as that of advising, treating and caring for the sick; of planning and directing programs of preventive medicine and public health, and thirdly of protecting the public against the activities of pretenders in medicine.

The personal nature of medicine is emphasized. The socialization of medicine should not be carried any further than it is, in the interests of all concerned. Medical associations which formerly looked entirely to the professional improvement of their members should, however, recognize the social, economic and political changes that had taken place as a result of the development of scientific medicine. Many county medical societies have public relations committees, the duties of which consist in promoting a good understanding with society at large, which in turn includes the adjusting of differences of opinion between organized medicine and other groups. Close relations should be established between physicians in general and those engaged exclusively in the practice of preventive medicine. Public health and preventive medicine are the direct result of advances in knowledge and practice of clinical medicine and the two should never be permitted to drift apart.

In discussing the economic relations of medicine, Dr. Judd gives some interesting statistics on the relation of illness and medical care to the national population, in anticipation of the report of the committee on the cost of medical care which is to be given next fall.

In the matter of political relations of medicine the speaker warns against dipping too deeply into politics. Such political influence as the medical profession can wield should never be other than that pertaining to the control of scientific medicine and its relation to society. Yet this of itself calls for greater activity than in the past.

It is hoped that every member of the Michigan State Medical Society will read this thoughtful and instructive address.

THE BEAUMONT LECTURES

Professor Howard B. Lewis in the eleventh Beaumont Foundation lectures under the auspices of the Wayne County Medical Society, the first of which is presented in

this number of the Journal, has selected a topic fundamental to an understanding of living phenomena. Ever since the proteins were recognized as substances uniformly present in animals and plants, they have been considered as perhaps the most important constituents of living matter. Chemists have studied the synthesis and decomposition of proteins and have learned considerable about their structure and reactions. Chief among the contributions of these men during the past century is the concept that proteins are what the constituent amino acids make them. One protein differs from another in the kinds and proportions of the amino acids that it contains. Hitherto almost insurmountable difficulties have confronted the biochemist in his attempts to follow the changes in proteins as they pass through the body. Recent experimental studies promise that synthetic amino acid diets which meet all of the protein needs of experimental animals will be available within a year or so. By the use of these the biochemist will then make considerable advances in protein metabolism. Various studies, however, have pointed the way to an understanding of amino acid and protein metabolism. It is of particular interest, then, that a summary of the current viewpoint on the amino acids should be available at the present time.

In his first lecture Professor Lewis discoursed about cystine, the first amino acid to be recognized, recalling its metabolic importance and its clinical relationship in the disease cystinuria. The second lecture (see May number of the Journal of the Michigan State Medical Society) deals with the general functions of the amino acids in metabolism.

The proteins which are taken into the alimentary canal as food are acted upon by the digestive enzymes of the stomach and upper intestinal tract. The products of protein digestion, the amino acids, after absorption by the intestinal mucosa find their way into the portal venous system and are distributed by the blood stream to various parts of the body. One tissue or another temporarily absorbs amino acids. These are utilized in three ways. First, certain of the amino acids are used, in the young and growing body, in the production of new tissue proteins. This results in growth. Once the tissues are completely formed they persist indefinitely in the body and are not subject to wear and tear. In the adult little or no amino acids are used in the maintenance of the tissues already formed. A second function of the amino acids is of importance throughout life. Certain of the absorbed amino acids in the tissues lose their acid characters of their amine groups and are recombined with others to form hormones. In this way thyroxin, insulin, adrenalin, glutathione and histamine, the chemical regulators of body metabolism, are formed. Finally, all excess amino acids which have been taken into the body are converted, chiefly in the liver, to glucose and to an unusable nitrogenous substance, urea, which is excreted. In broad terms, the above viewpoint suggests mechanisms through which the amino acids contribute to the formation of body tissues, to the humoral control of important body functions and to the supply of energy for body processes.

W. T. DEMPSTER.

ARE WE ENTERING THE TWILIGHT?

A book published four years ago bore the strangely suggestive title of The Twilight of the American Mind in which the author pointed out, long before the depression period was even thought of, the scarcely apparent fact that workers of high technical ability were being thrown out of employment and thereby eventually eliminated by the mechanization of industry and by scientific business organization. When the book was written its thesis was scarcely more than prophetic. Today it has become a sad reality. It is reported that fully one thousand musicians in New York City alone are facing destitution. Many teachers and high class clerks, all over the country, are being eliminated from the careers they had once chosen for themselves. This is probably one of the saddest phases of the economic depression, inasmuch as it has been such a blow to the cultural side of life.

The future of the nation depends upon the proper training of children and young adults who must succeed the present generation who have apparently made such a failure industrially as well as in a broad, administrative way.

Carlyle once spoke of "That corporative knave, society." The present social condition can be attributed to no single cause but may be laid to the folly of "That corpora-

tive knave, society." The way out may be evolutionary, a trial and error method.

The higher life of the nation is served by its teachers, its actors and musicians as well as those in other professional walks. Economy is necessary and must be exercised. Everyone sees it now when it may be too late. The greatest care should be taken, however, that its results may not fall too heavily upon our leaders and interpreters of the best in thought and art. Education should be made to suffer least of all. The final outcome will depend upon the quality and wisdom of leadership of the nation and the fact must be ever before us that those on whom we must depend are now in the schools.

MEDICO-LEGAL DEFENSE

Last year was one of the severest in the history of the Michigan State Medical Society in the cost of medical defense. Nothing but a full paid-up membership in County and State Society will enable the State Medical Society to meet the exigencies of such a situation should it prevail during 1932. For the monthly expense of defending malpractice cases during 1931, see page 160, February Journal of the Michigan State Medical Society.

If fire insurance premiums were permitted to lapse even a day, the policyholder would be a heavy loser in the event of a conflagration. A malpractice suit may eventuate in greater loss than that occasioned by a fire.

Hitherto, the State Medical Society has carried many delinquent members. It is no longer able to do so. As a result a member's name on the list of delinquents will mean that he forfeits the right to protection if threatened with a suit for malpractice.

Membership in county and state medical society and American Medical Association is as much a necessity to the practicing physician as an automobile and office equipment. It should be looked upon as important a "fixed expense" as either of the necessities mentioned. Prudence demands that it be so considered. No one should deny himself the benefit of such protection from the day he begins practice until that time when age or other factors compel him to retire. Even if one must resign from organizations, fraternal or social, do so, but maintain a live connection with the county medical society.

POST-HIPPOCRATIC MEDICINE

"Just as after the death of Socrates the essential unity of his teachings broke up into a variety of schools, such as Cynics, Cyrenaics, Megarians, and in particular the Followers of Plato, so after the death of Hippocrates medicine became split up into a number of sects, some further and some less far removed from the central doctrine of their master; each at its best emphasizing some important aspect of medical truth, but each in turn, as is the habit of sectarianism, running into strange and impossible extremes while remaining incapable of grasping the Hippocratic system as a whole."*

Perhaps the greatest scientific name after Hippocrates was Aristotle. He might have said, as Bacon did many centuries later, "I have taken all knowledge to be my province," for he was not only a scientist but a philosopher as well. His philosophy dominated thought until modern times. He wrote on botany, zoology, comparative anatomy, embryology and anatomy. He is said to have described over five hundred different animals. Garison speaks of him as being at his best in logic, ethics and natural history. While he made valuable contributions to medical knowledge he cannot be said to have founded a school. He was a pupil of Plato, but could hardly be called a contemporary of Hippocrates inasmuch as he was only fourteen years old when Hippocrates died.

There were four recognized post-Hippocratic schools of medicine: (1) the Dogmatists, (2) the Empirics, (3) the Methodists and (4) the Pneumatists. The most important member of the Dogmatist school was Diocles, who came to the fore a short time after the death of Hippocrates. Galen spoke of him in the highest terms as one who bore a close resemblance to the Father of Medicine. Diocles was born at Euboea about 400 B. C. His writings embraced the whole field of medicine. He was the first to differentiate pleurisy from pneumonia. Diocles was very modern in his doctrine that a local affection should not be considered or treated without reference to the body as a whole, that is, without consideration of the general condition of the patient.

It might be explained that the term Dogmatist, as applied to this early school of healing, was somewhat different from the modern significance of the word. The word *Theorist* would better describe the sect. Another important member was Praxagoras of Cos (340-320). He was a pupil of Diocles and in turn a teacher of Herophilus of the

*Hippocrates and His Successors in Relation to the Philosophy of Their Time. R. O. Moon, M.D., Longman's Green and Company, London.

later Alexandrian school. He was the first to distinguish between arteries and veins. The pulse was regarded not as being transmitted from the heart but as something adherent in the arteries themselves. He thought the arteries contained only air. Praxagoras was the first to give the vena cava its name, *hollow vein.*

"The most distinguished characteristic of the Dogmatists," according to Moon,* "was that they had taken as their guiding motto the saying of Hippocrates that 'the physician who is also a philosopher is godlike.'" They adopted their philosophy from the Timæus of Plato with results that were not wholesome to medicine. In this dialogue, among other things, Plato sets forth his conception of the physical world, including also some ideas on anatomy and physiology. Plato was, however, a metaphysician and not a scientist. He regarded both physicians and lawyers as useless and held that they should be banished from his ideal republic. In the following paragraphs from Plato's Laws, Book IV, he gives an interesting description of two types of doctors:

"And did you ever observe that there are two classes of patients in states, slaves and freemen; and the slave doctors run about and come to slaves and wait for them in the dispensaries; practitioners of this sort never talk to their patients individually nor let them talk about their own complaint; the doctor prescribes what he thinks good out of the abundance of his experience, as if he had no manner of doubt, and when he has given his orders, like a tyrant he rushes off with equal assurance to some other servant who is ill and so he relieves the master of the house of the care of his invalid slaves.

"But the other doctor who is a *freeman* attends and practices upon freemen and he carries his inquiries far back and goes into the nature of the disorders; he enters into discourse with the patient and his friends, and is at once getting information from the sick man and also instructing him as far as he is able, and he will not prescribe for him until he has at first convinced him; at last when he has brought the patient more and more under his persuasive influence and set him on the road to health, he attempts to effect a cure.

"Now, which is the better way of proceeding in a physician and in a trainer? Is he the better who accomplishes his ends a double way, or he who works in one way, and ruder and inferior?"

And again (Plato's Laws, Book X):

"For every physician and every skilled artist does all things for the sake of the whole, directing his efforts towards the common good, executing the part for the sake of the whole and not the whole for the sake of the part, and you are annoyed because you do not see how that which is best for you is, as far as the laws of creation admit, best also for the universe."

*Loc. cit.

The Empiricists, to quote the late Sir Clifford Allbut, were the "philistines of medicine." The word *Empiric* has unsavory associations so far as modern medicine is concerned—with us it means *irrational.* However, the post-Hippocratic physician was a subtle reasoner. The school was a reaction from the dogmatic sect with its disposition towards theorizing. The Empiric was an early clinical observer who bent himself to the task of treating his patient with as rational methods as he could command. In this respect his methods resembled those of Hippocrates, who paid great attention to clinical observation and who was guided to a very great extent by experience. Unlike Hippocrates, however, his reasoning was not inductive; he did not try to construct a general rule from isolated data. The founders were Philinos of Cos and Serapion of Alexandria, both pupils of Herophilus and Erasistratus of the Alexandrian School. They concerned themselves with immediate rather than with ultimate causes of disease. Research in remedies occupied their time to a large degree, this largely due to the stimulus to the school by the great commerce of the Ptolomies which included many drugs not known before. It was an age of experimentation with poisons and their antidotes; such drugs as hemlock, hellebore, aconite and henbane were first known at this time.

The Empirics laid great stress on *groups* of symptoms without concerning themselves with the nature of disease or its causes. Disease was defined as a "union of symptoms which is observed always in the same way in the human body." This school was comparatively long lived, since it did not become entirely extinct until the early part of the third century of the Christian era.

* * *

The Methodists. According to the Methodists the "cause of disease lay in constrictions and relaxations of the pores, between the atoms of which the body and its fluids are composed." "For this school," wrote Allbutt, "all pathology was interpreted and summed up in the doctrine of molecules and pores, of *strictum* and *laxum.*" This doctrine has its analogue at the present day in the permeability of membranes. Generally speaking, the Methodist considered acute disease to be a *status strictus* and chronic disease a *status laxus.*

With such a doctrine, therapeutics be-

came a very simple matter. The materia medica consisted of astringent and laxative measures. For astringents, the Methodists used cold air and cold water, vinegar, alum and lead plasters; their laxative remedies included venesection, diaphoretics, leeches, poultices and warmth. The Methodists did not believe in specific remedies any more than they believed in specific diseases.

The school had its origin about the time of the passing of medicine from Alexandria to Rome. The founder was Themison of Laodicea and the date about 50 B. C. The best known member of the school, however, was Thessalus, who maintained that medicine could be learned in six months. Thessalus, who took to himself the credit of founder, seemed almost totally ignorant of the work of his predecessors. "I have," said he, "founded a new sect which is the only true one, being obliged to do so because none of the physicians who have preceded me has found out anything useful for the preservation of health nor for banishing diseases, and Hippocrates himself has uttered many harmful maxims on the subject." He attracted a large number of the working class as pupils who were anxious to become doctors in six months, much after the twentieth century chiropractic sect.

The chief ornament of the school, however, was Soranus* the biographer of Hippocrates.

* * *

And lastly the Pneumatists. The Pneumatist was an offspring of the Dogmatist school. The sect consisted of many physicians who joined it for the purpose of opposing the Methodists. They got their name from their belief in *Pneuma,* which they regarded as an active principle which was the determining factor of health and disease. Aristotle, in the fourth century B. C., proclaimed the doctrine of an aerial substance which was introduced into the body by means of the circulatory system. The Pneumatists thought that the aerial substance or entity passed from the lungs into the heart or arteries and disease was in large measure due to *Pneuma.* Consequently, climate, heat and moisture had a great deal to do in causing health or disease.

The founder of the sect was Athenæus, who practiced in Rome about the middle of the first century A. D. He taught that the Pneuma was the world-soul or the living self-conscious God from which the souls of men, animals and plants proceeded. The Pneumatists paid great attention to diet, in which respect they resembled the Hippocratic school.

*For a fuller account of the post-Hippocratic sects the reader is referred to Lecture IV, Hippocrates and His Successors, by R. O. Moon, and to Chapter VII, Greek Medicine in Rome, by Sir Clifford Allbutt; also see note on Soranus, Page 140, February, 1932, Journal of the Michigan State Medical Society.

THE TUBERCULOSIS PROBLEM

Tuberculosis case finding has rapidly advanced in recent years. The modern program deals chiefly with the field of prevention and is supplementary to, rather than a substitute for, the established methods of diagnosis. It is made possible by the use of a particularly important phase of tuberculosis which, though previously known to a degree, is now brought out to its proper prominent position. This disease, for a varying period of time, can be present in adolescents and young adults especially, without the victims being aware of illness. Also, at its very beginning, a physical examination in a large proportion of cases will result in negative findings, because the involvement is too slight to produce physical signs. It is apparent therefore that there is *a great field among those seemingly healthy.*

The results of a program of this type recently carried out in Michigan are very interesting. In one high school fourteen cases of adult type tuberculosis were discovered by tuberculin testing the students and X-raying the reactors. This was one per cent of those tested as against the average of 0.4 per cent in the entire enrollment of 5,689 pupils in several schools. Analyzing the fourteen cases further, we are faced with some very interesting data. In only one of these students was there a history of contact, which means that in the ordinary program of thorough examination of contacts, only one of the fourteen cases would have been discovered. But three of these pupils had any symptoms whatever, and thus at the best only three would have gone to a physician, when as a matter of fact not one sought medical care. Abnormal physical signs on examination were found in only four of these students and therefore that would have been the result of general examinations. All the fourteen could be found only by the added modern method of *tuberculin testing* and *X-raying* the *reactors.*

The 1932 National Tuberculosis Associa-

tion slogan of "Tuberculosis Causes Tuberculosis" can best be furthered by instigating the above program through the entire State with the active coöperation of all the physicians. On complete analysis of results found in the above mentioned high school, there was definite evidence that one girl with advanced tuberculosis transmitted this disease to five others in her class. How much additional damage was done can be partly discovered by further observations.

If we are to find all the early cases, it is necessary to X-ray all adults, particularly those up to the age of thirty-five years, without a preceding tuberculin test and irrespective of whether there are any symptoms or physical signs. Also, a negative diagnosis should not be made without a corroborating X-ray. This method results in finding the disease at its onset, making it easy to procure cures by modern surgical collapse therapy if indicated. In one of the largest institutions in this state *77% of the patients are today receiving some form of this therapy*, whereas but a decade ago medical care only was given.

It is suggested that (1) all X-ray societies adopt the classification of adult type tuberculosis, childhood type and suspects. This will result in standardization of terms that would be better understood by the general practitioner; (2) full use be made of chest clinics as teaching centers, whether regular or traveling clinics, the latter particularly in sparsely populated areas; (3) general practitioners be given complete facilities to acquire knowledge of modern advancement and treatment of tuberculosis; (4) general practitioners take a more active and prominent part in anti-tuberculosis work, which will result in improvement of the health of the community as well as material benefit to themselves.

D. S. BRACHMAN.

A VALUABLE SECRET

Looking over an old volume of the *Detroit Lancet* (long since gone to its rest) I came across a paper in the number of August, 1878, two or three paragraphs of which seem worth reproducing. We will call it a "valuable secret."

"There was, 'once upon a time,' a physician who had a student to whom he had imparted the art and mysteries of his profession, till he (the student) supposed that he had acquired all that his preceptor had to impart, and thought it was time to go to seek his fortune by the practice of that which he had learned. As he was about to take his leave, his preceptor said to him: 'My son, you have studied long, and have learned much, but there is one thing of more importance than all that you have yet learned, that I have not yet communicated to you, and without which you are illy prepared to go into the world to practice the sublime art of medicine.'

"The student was surprised to hear this, but as he was animated with the praiseworthy ambition of learning all that there was to learn, he besought his master to communicate the much coveted secret on the spot. This the physician was willing to do, but he protested that it could not be imparted without a fee proportionate to the importance of the matter since it had cost him much study to discover the secret, which would be a safe and sure guide to the student in every emergency, and was, besides, a principle of such wide application that it was equally fitted to all diseases, and one that would, if he faithfully followed his precept, make him useful to the world.

"The student paid and departed, bearing with him his great secret in a sealed envelope, with orders not to open it till he was called to see his first patient. The occasion having arrived, the newly fledged doctor, somewhat puzzled over his first case, broke the seal of the envelope, and read:

"*'Be sure never to do anything to make your patient worse.'* The student's first thought was, that, in the language of modern slang, he was badly sold; but on reflection he concluded that, since the information cost him so dearly, he would use it, and by faithfully and diligently following the precept, he became a famous physician, and accumulated great riches."

THE PHONOGRAPH AS A VOICE CORRECTIVE

Everybody knows about the phonograph of Edison, which is one of the greatest inventions of all times, although few have heard about the invention of the telephone by Philipp Reiss, demonstrated before the Society on Physics, October 26, 1861, Frankfort-on-the-Main. Many know of the later improvement by Alexander Graham Bell and about the Hertzian waves and the invention of the vacuum tube in the radio apparatus by Dr. Lee De Forest, writes Dr. Emil Amberg in the *Rainbow,* of which he is the editor.

These efforts have changed for the better the standard of culture. The ear-handicapped derive great benefit from the accomplishments of these men. There is one phase of the phonograph which has not received sufficient attention. In 1889 Edison demonstrated his phonograph in Heidelberg, Germany, at the meeting of the German scientists and physicians and, inasmuch as he did not master the German language, his representative, in Edison's presence, spoke about the phonograph. He mentioned a point which is of great interest. A German soprano singer had sung into the phonograph. In the reproduction she detected nothing in the delivery which was out of the ordinary, but, when the number of revolutions was reduced, thus transposing her voice to a lower pitch, the singer could detect mistakes which she had made and she could therefore correct them. This phenomenon with which Edison was acquainted over forty years ago is not sufficiently appreciated. The domain of the mind is, indeed, of surpassing magnitude. The great majority of people follow only slowly in the footsteps of the giants in the realm of thought.

WEELUM AGREES WITH OUR EDITORIAL

Ah! Mon! bit yer ha'in' a graund editorial th' noo on th' "twilicht o' oor min's." It's nae oor cultural society wha has fallen doon. It's depressed o' coorse. Wha thing widna be depressed th' noo? An' its nae oor big business wha has fallen doon, else they wid a' be bankrupt th' noo. Its th' business wha wis nae foonded on guid business wha is in trouble. What has fallen doon is oor politicians. They are doon in th' mire, in th' quicksand an' saft clay o' wee politics, floonderin' a' aroon' like a chicken wha's heid's been cut aff. There's mud a' over their claithes, an' they hae'na a plank o' ony kin' tae pry themsels oot o' this depression, aye,—an' their attack on th' cultural side o' life by closing art museums an scuils, show us beyond a' manner o' doot, that they canna master th' situation.

Their min's dinna work in th' richt direction. They think anly o' how tae collect taxes an' tae spend a' they collect an' tae switch funds tae suit extremities. They are nae minded tae do mair work themsels or accept mair responsibility. They dinna seem tae ken that th' people o' Michigan wid govern themsels wi'oot sae mony political machines an' political papsters.

There's talkin' th' noo, o' sellin' a lot o' fairms because th' taxes are no paid. Wull ah'm bold enough tae ask, why should th' taxes be paid? Th' fairmers haena got their mony's worth for th' taxes they hae paid. Th' farmers can govern themsels for a'maist nothing.

Noo dae ye ken what ah ken, an' what ah'm tellin' ye? Th' maun wha mak's his livin' frae th' groon' an' mak's his hame on it, an' brings oop his family on it, should nae be penalized wi' taxes, an' the maun what has a wee hoos on an acre o' groon', an' grows his cabbage an' kale, shouldna hae tae pay taxes on it. Thae people should be encouraged in this independence, an' wi their wee hames, they wull nae neglect th' cultural side o' life.

And dae ye ken wha mair ah'm thinkin'? Ah'm thinkin' if th' state tak's ony o' thae fairms, it micht drive a guid bargain by gi'en them tae aboot saxty per cent o' oor politicians an' a' th' lame ducks, sae as tae encourage thae chaps tae become self supportin' an' no be barnacles on th' bottom o' th' ship o' state.

These are vital days. We're in th' mornin' oors o' a terrible crisis, ah'm tellin' ye, an' we're needin' th' noo, a he-man o' culture an' power tae lead us. Oor revolutionary crisis gi'ed us Washington. Oor slavery crisis gi'ed us Lincoln. This crisis o' ungodly corruption an' political inefficiency wull gi' us —WHO?

Th' challenge is thrown doon tae th' he-men o' th' country.

Ah weel, it's a bonnie nicht th' nicht. Guid nicht.

WEELUM.

ODDS AND ENDS

"The scientifically trained man is the only one who has anything worth while to say but he hasn't yet learned how to say it."—Anon.

* * *

Many persons pride themselves on being of a practical turn of mind. Disraeli defined the practical man as one who practices the blunders of his ancestors.

* * *

The New York Physicians Art Club is composed of a group of physicians who have adopted as a hobby some form of art. Early in March their annual art show was held in which the exhibitors numbered seventy-three. The exhibits included landscapes and marine paintings. The subjects are outside of medicine, indicating the fact that the physician artists pursued the work as recreation. The scalpel is replaced by the paint brush in a real sense when these doctors are on pleasure bent.

* * *

I am wondering if, with our public education in matters pertaining to health, we are not making the laity too health conscious. A man walked into a restaurant the other day and called for a bowl of soup. The waiter brought the desired dish and set it down before the fastidious customer and went about his work. The diner, on discovering two cockroaches in the soup, summoned the waiter to ask him what he meant by bringing him soup with cockroaches in it.

"Them ain't cockroaches," replied the waiter, "them's vitamin bees."

* * *

At a recent luncheon given in honor of Dr. John E. Clark of Detroit by the senior or quarter century club of the Wayne County Medical Society, the guest related an incident that happened early in his practice which goes to show the unfaltering faith of the old-time patient in the doctor of half a century ago. Dr. Clark was called to see a child of a family whose physician was absent in Europe. He assured the mother (this in the pre-antitoxin days) that her child was very seriously ill and in all probability would not recover. The mother in despair cried, "Oh, that Dr. ——— were only home. He was with us when we buried the other three children."

* * *

Now it is all clear—as mud. "The term chiropractic when used in this act shall be construed to mean and be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and the art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column, for the purpose of permitting the recreation of all normal cyclic currents through nerves that were formerly not permitted to be transmitted, through impingement, but have not assumed their normai size and capacity for conduction as they emanate through intervertebral foramina—the expression of which were formerly excessive or partially lacking—named disease."—Quoted from the New Jersey Chiropractic Act.

* * *

We have received a copy of The Daily Mining Journal, published in the Upper Peninsula of Michigan, which contains a letter by Dr. C. F. Whiteshield, President of Ontonagon County Medical Society, protesting against the sweeping statement made recently by Dr. Arthur Dean Bevan, a former President of the A. M. A., in which he is credited or discredited with the statement that "Over 90 per cent of physicians of America are bootlegging liquor prescriptions." We quite agree with Dr. Whiteshield's protests against this statement and believe that the statement is absolutely contrary to facts. On such subjects as "bootlegging alcohol prescriptions" or "fee splitting" or anything else that has been attributed to the medical profession, the scope of any one man's experience is too limited and confined to too small an area to justify any kind of statement. The vast majority of physicians are as law-abiding as the very highest grade citizen of this republic. Any person making such a statement which reflects upon the profession of which he is a member is remiss in his duty "as a debtor to that profession." (See quotation from Bacon at the head of the editorial department of this Journal.)

CORRESPONDENCE

PHYSICIAN WANTED

March 1, 1932.
Winn, Mich.

Dear Sir:

You have been referred to me to help us to secure a physician to practice in our town. Our community needs a physician and I feel sure that if a doctor located here he would have a good practice. Can you recommend a doctor who would locate here?

Sincerely,
G. E. Starkweather.
(P. M.)

COUNCILOR ACTIVITY

March 11, 1932

Dr. Frederick C. Warnshuis,

This is to inform you, that on the evening of March 10th, I had representatives from all the societies in my district, at home for dinner. Those present were Dr. Burt of Ithaca, Dr. Highfield of Alma, Dr. Race of Caro, Dr. Dougher of Midland, and Dr. Kempton and Dr. Anderson of Saginaw.

At this meeting, I emphasized the appointment of a Public Relations Committee, and also brought up the questions as outlined by the council.

Trusting this is satisfactory, I am,

Yours fraternally,
J. H. POWERS.

To the Editor of the Journal of the Michigan State Medical Society.

That it's an ill wind that blows nobody good, is an old saying. My long climb back to health from the deep depths of a great physical depression has given me time and inclination to read much.

Nothing that I have read has given me more pleasure and profit than the Journal of the Michigan State Medical Society which you so ably edit.

In the current number let me congratulate you on "Taxes." You have hit the nail on the head a good swat. More power to you.

Good old "Weelum," whoever he is, touches the spot, and I would like some day to clap him on the back.

Expect to be back in Detroit May 1 or thereabout. So until then here's to you.

Yours truly,
DON M. CAMPBELL.

Miami Beach, Florida.
March 19, 1932.

It is almost needless to say that every reader of this Journal will be pleased to hear that Dr. Campbell is making such a speedy recovery and that he will soon be back to his old familiar haunts. The Journal extends its best wishes.—EDITOR.

March 25, 1932

The Editor of the Journal of the Michigan State Medical Society: The Wayne County Medical Society through its Public Health Committee is taking a very active interest in Tuberculosis. It arranged a very fine series of postgraduate lectures on Tuberculosis at the Herman Kiefer Hospital, delivered by Dr. Henry S. Willis of the Maybury Sanitarium. Daily clinical conferences have been held by the staff of Herman Kiefer Hospital since November 15.

Each Detroit hospital has devoted one staff program to Tuberculosis. Two evening programs on Tuberculosis have been addressed by Dr. Alfred Henry of Indianapolis, and by local specialists. Our Society, together with the Department of Health, and the Tuberculosis and Health Society, of Detroit and Wayne County, will put on an intensive "Tuberculosis Finding Campaign" during April and May.

School children are our objective this year. A letter to each parent will urge him to take his child to his physician, who during specified hours will make a skin and a physical examination for a nominal fee, or without charge if unable to pay. Cooperating Roentgenologists have agreed to X-ray the positive reactors for a nominal fee. A special hunt will be made for contacts and these will be given the same complete examination.

By radio, newspapers, billboards and addresses before all possible lay groups, interest will be stimulated in this important disease. We will reach the pre-school age child at its examination in midsummer. We hope to extend this work to other groups another year and intend to make this a yearly activity as we have done so successfully in our diphtheria prevention program.

Yours for a more intense interest in Preventive Medicine by all physicians.

HOWARD W. PEIRCE, Chairman,
Public Health Committee,
Wayne County Medical Society.

OBITUARY

DR. JAMES A. MILLER

Dr. James Miller of Farmington, Michigan, died at his home on March 1 at the age of fifty-eight years. Cause of death was apoplexy. Dr. Miller had practised his profession for thirty-two years. He was born in Southfield Township, Wayne County, and attended the Birmingham High School, after which he attended and graduated from the Detroit College of Medicine. He was a member of the Oakland County Medical Society and the Michigan State Medical Society. Dr. Miller took an active part in civic and fraternal affairs. He was also Director of the Farmington Peoples Bank. He is survived by his wife, Mrs. Grace Miller, and two brothers, Henry A. Miller of Redford, Michigan, and Volney Miller of Milford, Michigan.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. R. R. Smith, Grand Rapids, has returned from a month's vacation spent in the south.

Dr. J. H. McRae, Grand Rapids, returned in March from a six weeks' visit to London clinics.

A Post-graduate Conference will be held at Mercy Hospital, Manistee, on April 6 for the 9th Councilor District.

See this issue for program of annual meeting of the state association of Industrial Physicians and Surgeons in Grand Rapids.

Dr. A. M. Campbell, Grand Rapids, attended the Philadelphia meeting of the American Association of Gynecologists and Obstetricians.

Mrs. W. J. Cassidy, wife of Dr. W. J. Cassidy of Detroit, died at her home on February 28. Dr. and Mrs. Cassidy were married in 1926.

Dr. A. E. Voegelin of Detroit delivered a series of four lectures on Cardiology at the Evangelical Deaconess Hospital, Detroit, as follows: Feb. 4, Rheumatic Heart; Feb. 11, Thyroid Heart; Feb. 18, Degenerative Heart; Feb. 25, Coronary Disease.

Dr. L. E. Hamlin of Norway, Michigan, read a paper on Tannic Acid Treatment of Burns, and Dr. M. Cooperstock, Assistant Professor of Pediatrics, University of Michigan, located at Northern Michigan Children's Clinic, spoke on "Recent Advances in Treatment of Childhood Conditions" at the February meeting of the Menominee County Medical Society.

The March meeting of Shiawassee County Society was held at a noon luncheon at Memorial Hospital, Owosso, on the 10th inst., with a good attendance present. The speaker was Dr. Angus McLean, of Detroit, who addressed the society on the "Relation of the physicians and local hospitals in treatment of all veterans." On motion the society went on record as being favorable to the passage of the bill now before congress proposed by the A. M. A. bearing on the treatment of veterans at home by their own physicians either at home or in a local hospital.

Dr. W. H. Marshall of Flint was tendered a complimentary dinner on his birthday, March 23, by the Genesee County Medical Society. Dr. Marshall is accredited with bringing "the Hurley Hospital from a third rate country hospital to one of the outstanding institutions of the county." The guest speaker at the banquet was Dr. J. H. Elliott of Toronto, a classmate of Dr. Marshall. Other speakers included Dr. Carl F. Moll, president of the Michigan State Medical Society, Dr. L. M. Bogart, Dr. James E. Davis, Detroit; Dr. A. C. MacKinnon, Atlanta, Michigan; Dr. Marshall, and W. B. Smith.

Our Representatives in Washington are: Senators: Arthur H. Vandenberg, Grand Rapids, Michigan; James Couzens, Detroit, Michigan.

Representatives

District	
1	Robert H. Clancy, Detroit, Michigan.
2	Earl C. Michener, Adrian, Michigan.
3	Joseph L. Hooper, Battle Creek, Michigan.
4	John C. Ketcham, Hastings, Michigan.
5	Carl E. Mapes, Grand Rapids, Michigan
6	Seymor H. Person, Lansing, Michigan
7	Jesse P. Wolcott, Port Huron, Michigan.
8	Michael J. Hart, Saginaw, Michigan.
9	James C. McLaughlin, Muskegon, Michigan
10	Roy O. Woodruff, Bay City, Michigan.
11	Frank P. Bohn, Newberry, Michigan.
12	W. Frank James, Hancock, Michigan.
13	Clarence J. McLeod, Detroit, Michigan.

The Northern Tri-State Medical Association will hold the fifty-ninth annual meeting Tuesday, April 12, 1932, at the Academy of Medicine Building, Toledo, Ohio. The program is as follows: Psychiatric Clinic State Insane Asylum, Toledo, Ohio, Ora O. Fordyce, M.D., N. W. Kaiser, M.D.; Orthopedic Clinic, Gillette Clinic, Toledo, Ohio, Edward P. Gillette, M.D.; Dermatological Clinic, U. J. Wile, M.D., Prof. Dermatology, University of Michigan; The Fluid Status of Syphilis Therapy, U. J. Wile, M.D., Prof. Dermatology of the University of Michigan; Papilledema, W. R. Parker, M.D., Prof. Ophthalmology, University of Michigan; The Recent Studies in Blood Chemistry, H. B. Lewis, M.D.; Sulphydryl—The Basis for Further Studies in Cell Division, Lankenau Hospital, Philadelphia, Pa., Stanley P. Reimann, M.D.; The Control of Pollen Allergy, Warrent T. Vaughan, M.D., Richmond, Va.; The Results of Parathyroidectomies, Max Ballin, M.D., and Plinn W. Morse, M.D., Harper Hospital, Detroit, Mich. The evening session will be held at the Commodore Perry Hotel, where the program will consist of a banquet and address entitled Lesions of Bone and Their Treatment, by Dean Lewis, Professor of Surgery, Johns Hopkins University, Baltimore, Md.

DR. BAUER COMING TO THE UNITED STATES

Dr. Julius Bauer, Professor of Medicine in the University of Vienna, will be in America next September on tour. His visit is sponsored by a group of medical men in Northeastern Ohio, who have arranged for a series of lectures in a number of the cities of that part of that state, as well as in some other states. Dr. Bauer is known as one of the ablest internists in Europe, and a teacher of world-wide renown. He is a master of excellent English, and has a wide repertoire of subjects in clinical medicine. His terms for lectures are quite moderate, and his acquiescence in desired subjects is well assured. It is hoped that some of the groups engaged in the intensive study of internal medicine in Michigan can see their way clear to securing the services of this admirable teacher. A very small amount from the pockets of a group of ten or twenty physicians will secure to these students and their friends an opportunity of contact with the latest in European, and particularly in Viennese, medicine.

Full particulars may be obtained in regard to this whole matter by addressing Dr. William M. Donald, Detroit, or Dr. Edward B. Pedlow, Lima, Ohio.

MEDICAL ECONOMICS

CAN WE AFFORD STATE MEDICINE?

J. G. R. MANWARING, M.D.
FLINT, MICHIGAN

Part II

A SUGGESTED PROGRAM FOR ORGANIZED MEDICINE

It does seem as though we are being hurried along to the day when government will take over the practice of medicine whether it is advantageous to the public or not.

There seems to be a lot of feeling displayed among physicians when discussing this problem but we cannot convince by passion nor rule by arrogance. We will not get far by calling names, venting indignation when our "sacred" calling is questioned, lamenting loudly and prematurely the passing of the family doctor or condemning more or less sincere troublesome welfare agencies.

We can arouse very little sympathetic support by pointing out such a degree of progress, search for truth, devotion to clients and sacrifice in service as few groups have experienced.

Discussions of this kind, coming from the heart and not from the head, lay the proponents open to sceptical criticisms for which material of some kind is always found.

The public is not interested in the welfare of phy-

sicians as such; they are looking only for a special type of service at the fairest terms they can get.

Instead of the common type of approach to this subject it seems that it would be a lot better to consider it from the standpoint of the public. And instead of waiting to see what will happen we should adopt a real program based on fundamental things.

As far as possible this program should be freed from the vagaries of emotional fears, the inertia of dumb conservatism and the phantasmagorical dreams of the underdone enthusiast.

No program can be safe unless founded on knowledge. The Committee on the Costs of Medical Care has already done a great work in revealing facts. We could well use it as an example.

We have heard many versions of how State Medicine in its various forms has worked in other countries. These reports show widely divergent views and must in part be based on superficial knowledge or bias.

Nothing is so helpful in plotting the future as a study of the past. Experience is a much better teacher than unchecked reasoning. In arriving at the facts upon which to base a future program, a first hand investigation of what is being done and what has been done should be made. These studies should be made by commissions or committees with members representing the different interests involved —business men, social workers, historians, economists, patients, philanthropists, politicians and others should be members of some of the various needed committees as well as dentists, hospital executives and physicians.

The committees need not be large and most of them need not be expensive. They should give full reports of their findings and, as they are largely devoted to finding facts, there should be few differences. If differences do occur, minority reports should be given.

The A. M. A. could finance this work or possibly some interested organization or individual might do so.

A few of the fields calling for investigation are indicated here:

1. There is a fear that our government is extending its functions so far that there is a real danger of the burden of taxes thus necessitated leading to a not distant bankruptcy with repudiation, revolution by peaceful or forceful means, or what not. For this reason alone the additional tremendous burden of medical care may be very unwise. This may well be made a subject of study.

2. There is a strong suspicion that the costs of medical care as organized and given by a department of government would be like so many of its other business ventures and cost so much more than its benefits warrant that it would eventually fall of its own weight. This should be looked into.

3. There is a difference of opinion as to the quality of service to be expected from such a government service. There is plenty of material of all kinds to be found upon which to base a sound opinion as to the truth in the matter. This should be gone over by a suitable body.

There are some problems nearer home to the profession which need clarifying. These are matters of dispute and misunderstanding between the public and medical profession and should be investigated freely and freely reported upon. The confidence of the public can be obtained in no other way.

4. Our registration laws should be looked over. As they are now they are so formulated that they are causing such a multiplicity of disputing cults as to lower the esteem with which all are regarded by the public.

5. Another question is the system of free services received by a large proportion of the people at the expense of the physicians and their patients. This is made possible by the great number of physicians who are so anxious to acquire additional learning and skill in special fields that they readily take up this burden laid upon their willing shoulders by paid workers.

They receive little or no compensation for this work and they will not so long as they solicit it on such terms. There seems to be no other field where such an exploitation of a profession and the public occurs.

A sincere, mixed committee representing various groups might suggest a suitable system of post-graduate training for specialists which could be obtained without their leaving home and with some mitigation of the present evils.

6. The problem of health insurance of a compulsory kind is being advocated now. How has it worked? Is it a good method for us to adopt? A careful study might give us a lot of light on this question.

7. Last fall the head of one of our great national organizations advocated the application of certain business practices to medicine. There is a very grave question as to whether more business methods and more business ethics should be used in the professions. The ethics of business should be carefully scrutinized by an open minded body and some information along this line obtained before we accept the advice of those leaders who would have us adopt up-to-date business methods.

8. The question of group practice comes up. Here is a large field for examination. Are the temptations of practicing alone, unobserved and uncontrolled by colleagues, too great for the integrity of some physicians?

Because of this apparently weak point in individual practice, suspicions are raised and accusations made that there are certain prevalent evils such as the secret division of fees, unnecessary operations, excessive charges and other practices common to ordinary business but certainly wrong when indulged in by physicians.

The advantage of a group in the way of assembled knowledge is often advanced. There are other considerations which may somewhat modify this claim, certainly as applied to state medicine. A very careful examination of group practice is needed for our guidance.

9. Are our young doctors sufficiently instructed in the social, economic and ethical aspects of practice? It seems to be true that many mistakes are made which could have been avoided by such instruction. The teacher who states that the question of ethics is summed up in the Golden Rule and that no further instruction is necessary, may be as wrong as the one who says that no training in the economics of practice is necessary, for the business of medicine is like any other business.

Just now commissions are not in good repute in some quarters, but, when problems are so complex and so large, no better way has been found to get honest-to-goodness data than by a representative commission or committee.

This program should be for the purpose of getting facts upon which we can build for the future. With them there is a possibility of crystallization of opinions and practice. Without them the same present uncertainty will remain.

In this series of articles certain of the above questions are discussed. Our own Society has appointed a committee, whose chairman is Dr. Wm. H. Marshall, which is starting similar investigations. It is hoped that it will be supported to the limit in order that the problems outlined above can be fully covered.

608 1ST NAT. BANK BLDG.

SOCIETY ACTIVITY

POST GRADUATE OPPORTUNITIES SPRING AND SUMMER

The Michigan State Medical Society, the Department of Post Graduate Medicine of the University of Michigan, the Detroit College of Medicine and Surgery and Staff Members of Detroit Hospitals

ANNOUNCE THE FOLLOWING COURSES FOR GRADUATES

ANN ARBOR—UNIVERSITY HOSPITAL:

April 11 to 15, inclusive—TUBERCULOSIS. Emphasizing the early diagnosis of tuberculosis, X-ray, clinical methods, and the medical and surgical approaches in treatment. University Hospital, Ann Arbor.

April 5 to 30, inclusive—OPHTHALMOLOGY and OTOLARYNGOLOGY. An advanced intensive course arranged for specialists. University Hospital, Ann Arbor.

Special Courses in all departments during Spring and Summer months.

DETROIT:

PRACTITIONERS' COURSE IN MEDICINE, SURGERY, OBSTETRICS AND PEDIATRICS. June 6 to 18, inclusive, 8:00 A. M. to 4:00 P. M.

PROCTOLOGY. June 6 to 18, inclusive, 8:00 A. M. to 12:00 M. Receiving Hospital, Detroit. Drs. L. J. Hirschman, E. G. Martin, and Associates.

GYNECOLOGICAL PATHOLOGY. June 6 to 18, inclusive, 8:00 A. M. to 12:00 M. Pathological Laboratories, Detroit College of Medicine and Surgery, Detroit. Practitioners taking this or the preceding course may arrange to spend the afternoons in the Library, Pathological Laboratories, or in the General Practitioners' Course.

Herman Kiefer Hospital—Diagnostic Clinics in Tuberculosis and Contagious Diseases.

Enrollment in all courses is limited. For further information, check courses of interest and mail to

Department of Post-Graduate Medicine,
University Hospital,
Ann Arbor, Michigan

MEMORANDA

The following facts are for your memorandum book or calendar:

1. Our annual meeting will be held in Kalamazoo, September 13, 14 and 15. The House of Delegates will convene on the 13th. Section Scientific Meetings will be on the 14th and 15th.

2. The American Medical Association meets in New Orleans the week of May 8. Write for your hotel reservations. Special rates on all railroads under the certificate plan. Be sure and secure a certificate from your local agent when you purchase your ticket.

3. Your dues are payable April 1. If unpaid, send your check to your county secretary.

4. Post-graduate courses and opportunity at the University and Detroit. A special course in Ann Arbor beginning April 11. Write for information.

TIME AGAIN

April First—they say it is "All Fools Day"—but we are not concerned with that feature. To the County and State Society April first is annual dues date limit. If you have not paid your current dues to your County Secretary you are in the suspension zone limit. Avoid suspension by remitting your dues to your local secretary and so avoid the penalties of suspension.

In these days you cannot afford to forego medico-legal protection and other organizational benefits. Act now to remain in good standing.

If funds are low your County Secretary will accept your note. See him at once. Neglect may be costly.

DON'T DO IT

In typewritten letters this identification mark "JD/JS" is assumed to mean that the letter was dictated by John Doe to Josie Stuot, the stenographer. Firms, institutions, employing several or many stenographers, adopted this identification means. When typewriters were made attainable by the rank and file many of us purchased one and felt we were in an advance class of business progressives. We used the typewriter and our own "hunt and pick" system to write our letters—some still do. And then a new custom became in vogue—to employ a stenographer, if you could afford it, and you dictated your letters, they were typed and all you did was sign the letter. The "JD/JS" in the lower left corner conveyed to the recipient that you had graduated from the "hunt and pick" system and were up with big business in employing a stenographer. Some of us who owned typewriters were unable to hire stenographers and we had to content ourselves by doing our own typing. We were loath to be outdone by our more fortunate brothers, so just to remain in style, after finishing our own typing we slipped in a "JD/JS," fictitious of course, in the lower left corner. How would the recipient know we didn't have a stenographer? The custom prevails generally.

We advise that you stop it. If you have a stenographer *forbid this identification.* Do not use it yourself. Why?

In a recent suit for libel and slander, the plaintiff presented letters sent by the defendant that were identified in the lower left corner by a "JD/JS." The claim was made, and upheld by the court, that the identification mark was proof positive that the libel and slander statements had been made to a *third party,* the stenographer, and this won the case and a monetary verdict. Had the JD/JS been omitted from the letter there would have been no evidence of a third party and no verdict.

So forget style or pride. Ban the identification mark. Safeguard yourself in these days when we are prone to write "harsh words" to the party who doesn't pay his bill. In these depression days it is not a mark of "common class" not to have a stenographer, and slander or libel suits cost money.

OFFICIAL CALL

To the Officers, Fellows and Members of the American Medical Association

The eighty-third annual session of the American Medical Association will be held in New Orleans, Louisiana, from Monday, May the ninth, to Friday, May the thirteenth, nineteen hundreed and thirty-two.

The House of Delegates will convene on Monday, May the ninth.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, May the tenth, at 8:30 P. M.

The various sections of the Scientific Assembly will meet Wednesday, May the eleventh, at 9 A. M. and at 2 P. M. and subsequently according to their respective programs.

Edward Starr Judd, President.
Frederick C. Warnshuis,
Speaker, House of Delegates.

Attest:
Olin West, Secretary
Chicago, Illinois, March the fifth

SAGINAW PLAN

We propose that the Saginaw County Medical Society become responsible for the medical care of all indigent contagious diseases that are cared for in the Saginaw County Contagious Hospital, and for this service the Saginaw County Medical Society, through its advisory committee, proposes to contract with the Board of Supervisors to do this work for the sum of thirty-six hundred dollars ($3,600) per annum. The medical society would further agree to have three doctors on call at all times, and a visit to the hospital by a doctor each day. The medical society would not agree, under this plan, to take care of contagious diseases in private homes, or any place other than the Saginaw County Contagious Hospital. It would be further provided that any doctor may take care of his own cases if he so desires, but that he would not be remunerated by the county for so doing. It should be specified that this service does not include laboratory work, either special or routine, and we recommend that special arrangements be made with the Central Laboratory to do and supervise this work as it does in our general hospitals. This work will be under the direct supervision of Dr. Pickett and an advisory committee appointed by the medical society. This group will formulate and act upon all standing orders and hospital policies, and it will choose three doctors for service each month. Each member of the medical society shall signify whether or not he is willing to participate in this plan. Those who wish to participate in this plan shall serve one month when their turn comes, and as for remuneration for this service, each shall share and share alike in the division of the money paid to the society by the county, providing that first fifteen dollars ($15) of this division shall go to pay their dues to the Saginaw County Medical Society. Recognizing that this will entail more work for the secretary-treasurer of the society, it is recommended that he be paid a salary not to exceed one hundred dollars ($100) per annum, from which he shall pay his own dues, and since he will be responsible for the money involved, the society should pay for a bond to cover same. Any doctor of the society who does not wish to participate in this work shall pay his dues as he has in the past, and shall not receive any of the money paid by the county.

Respectfully yours,
STUART YNTEMA, M.D.
ARTHUR LEITCH, M.D.
MARTHA LONGSTREET, M.D.
JULIUS POWERS, M.D.
WALTER SLACK, M.D.
Advisory Committee.

MEETING OF INDUSTRIAL SURGEONS

The annual meeting of the Michigan Association of Industrial Physicians and Surgeons will be held in Grand Rapids, Michigan, April 29, 1932, at the Pantlind Hotel.

The meeting will be called to order promptly at 9:00 A. M. for a clinical program. A business meeting will follow at 11:30 A. M.

At 12:15 there will be an open luncheon meeting. At this time there will be a conference on Insurance Relations, with a short discussion of the problems as related to the medical profession by a commissioner from the State Department of Labor and Industry and a representative of the Insurance Companies. Also, a short discussion on relation of employer to labor.

The afternoon meeting will consist of a clinical program and a short business meeting which will be adjourned promptly at 4:30 P. M.

At 6:30 P. M. there will be a dinner at the Pantlind Hotel. The speaker of the evening will be Dr. Volney S. Cheney, Secretary of the American Association of Industrial Physicians and Surgeons of Chicago.

A very interesting and unusual program has been arranged for this meeting of subjects of a clinical nature as well as those connected with the relationship of employer, employee, and Insurance Company, as also the Industrial Board and Labor Commission.

An unusually large attendance is expected, not only of the members of the Michigan Association of Industrial Physicians and Surgeons, but also those who are interested in this vast and rapidly growing division of surgery and medicine.

Further details will be announced in a later communication to all of the members, and those who are interested may obtain this information by writing to the office of the President of the Association, Dr. C. S. Gorsline of Battle Creek or Dr. J. Duane Miller, Chairman of the Grand Rapids meeting, Medical Arts Building.

The Kent County Medical Society is assisting the committee in arranging for this meeting. The Committee is composed of Dr. J. Duane Miller, Chairman, Dr. J. Newell Holcomb, Dr. Robert H. Denham, Dr. Leon E. Sevey, Dr. Henry J. Pyle, and Dr. William A. Hyland.

MINUTES OF THE MARCH MEETING OF THE EXECUTIVE COMMITTEE

The Executive Committee of the Council of the Michigan State Medical Society met in Grand Rapids at 6:00 P. M. on March 2, 1932.

Present:
Chairman—B. R. Corbus
Geo. L. LeFevre
C. E. Boys
J. D. Bruce
President—Carl F. Moll
Secretary—F. C. Warnshuis

and by invitation Dr. Earl I. Carr, Chairman of the Legislative Committee, and W. H. Marshall, Chairman of the Committee on Survey of Health Agencies in Michigan.

1. Dr. Carr, Chairman of the Legislative Committee, presented in detail the activities and discussions of his committee in the matter of legislative activity. On motion of Bruce-LeFevre, the work of the committee was commended, its activities approved and the committee assured of the support and assistance of every officer or any member of the society that they might deem advisable to call upon in carrying out the plans that the committee has under consideration.

2. The Secretary presented a request from the Chairman of the Medico-Legal Committee, Dr. Wm. J. Stapleton, Jr., for clerical assistance. After discussion the matter was referred to Dr. Bruce of the Medico-Legal Committee.

3. The Secretary presented a letter from the Chairman of the Medico-Legal Committee, Dr. Wm. J. Stapleton, Jr., presenting the position assumed by the society's attorney, Mr. Herbert V. Barbour, in the matter of annual retainer and compensation for his legal services. After discussion, on motion of Boys-LeFevre, this matter was referred to the Medico-Legal Committee for recommendation.

4. Upon motion of Boys-LeFevre, the Executive Committee designated the seniority rank of alter-

nate delegates to the American Medical Association as follows:

Carl F. Moll
Philip Riley
R. H. Denham
Henry E. Perry

5. Upon motion of Boys-LeFevre, it was decided that certain recommendations contained in the report of the special committee on Survey of Michigan Health Agencies should be held and not transmitted until the committee has perfected its final report and the House of Delegates has recorded its action upon the final report of the committee, for the reason that the final conclusions cannot be definitely determined and the policies adopted until the committee has completed its work.

6. Dr. Marshall, Chairman of the Special Committee on Survey of Health Services, reported in detail the plans that were being formulated for the conducting of the state-wide survey directed by the House of Delegates, and outlined in general the scope, extent and assistance required in conducting this survey. On motion of Bruce-Boys, it was resolved that the Executive Committee had listened with tremendous interest to the plans and program outlined by Dr. Marshall and that it was the sense of the Executive Committee that the survey be continued along the lines outlined by the committee and that the committee be authorized to engage the services of Dr. Sinai as field director of this work.

7. The Secretary presented a financial statement of the society which was filed.

The meeting adjourned at 10:45 P. M.

F. C. WARNSHUIS, *Secretary.*

POST GRADUATE INSTRUCTION IN PSYCHIATRY

A course of post graduate instruction in Psychiatry was held at the State Psychopathic Hospital from February 15 to March 15. This was attended by ten physicians, coming from each of the Michigan State Hospitals for mental disorders.

The instruction was conducted by the Staff of the Department of Psychiatry of the University of Michigan.

The course of instruction embraced clinical discussions and demonstrations on psychiatric disorders; the dynamic mechanisms in mental pathology; the technic of the psychiatric examination and preparation of records; neurological problems occurring with psychiatric disorder; practical experience in the examination of out-patients with psychiatric problems and lectures and demonstrations in the neuropathology of neuropsychiatric disorders.

RADIO BROADCASTS

The Radio Committee created by the House of Delegates has accomplished a splendid work. It has prepared a series of health educational talks for weekly broadcast. Contact was made with County Societies and through their local efforts time on the air was secured from stations in the following cities: Jackson, Lansing, Grand Rapids, Flint, Bay City and Benton Harbor. Broadcasts are being made once or twice a week from these stations.

In addition to these stations the Wayne County Medical Society is broadcasting from two Detroit stations two and three times a week.

The educational results will be increased if members will ascertain the hour of their local broadcast and then urge patients and friends to "tune in."

COUNTY SOCIETIES

CASS COUNTY

At the yearly meeting of the Cass County Medical Society, the following officers were elected:

President—Dr. Samuel Stevens
Secretary-Treasurer—Dr. S. L. Loupee
Delegate—Dr. W. C. McCutcheon.

It was voted to continue the joint meeting with the Berrien County Society throughout the year 1932. Though each society prefers to maintain a distinct organization, the joint meetings have proven highly interesting and profitable to both groups.

S. L. LOUPEE, M.D.

JACKSON COUNTY

The February meeting of the Jackson County Medical Society was called to order in the Memorial Room of the Elks Temple on Tuesday evening, February 16, with Dr. C. E. DeMay presiding. Dr. Frank VanSchoick, Chairman of the Health Education Committee, gave a report of the results of the Mantoux tests given to the pupils of the Jackson High Schools last fall. Of the 450 tests given, eighty-four were found to be positive. Of these, forty-nine pupils sought medical attention, twenty refused X-ray examination and fifteen were lost track of. Of the forty-nine seeking medical attention, thirty-three went direct to X-ray specialists and sixteen saw their own family physician. Of the latter group only three were advised to have X-ray examinations made. The results of the X-ray examinations in this series were reported as follows:

Active adult type tuberculosis, 0.0 per cent
Inactive type tuberculosis 3 plus, 7.0 per cent
Juvenile type tuberculosis 3 plus, 0.0 per cent
Juvenile type tuberculosis 2 plus, 23.0 per cent
Juvenile type tuberculosis 1 plus, 30.0 per cent
Juvenile type tuberculosis plus minus, 40 per cent

Dr. Lewis spoke briefly of the importance of the X-ray examination in the diagnosis of juvenile tuberculosis. He stated that this was imperative in all cases showing a positive Mantoux test as a diagnosis could not be made from the clinical signs or symptoms.

Dr. John Ludwick then introduced Dr. Frederick Coller, Professor of Surgery at the University of Michigan, as the speaker of the evening. His subject was "Mortality Factors in Acute Appendicitis." Attendance was sixty-eight.

NORTHERN MICHIGAN MEDICAL SOCIETY

The meeting of the Northern Michigan Medical Society, held at the Perry Hotel, Petoskey, Thursday, March 10, was called to order by President Stringham. Committee on Public Relations was appointed consisting of Drs. J. Stringham and Fred Wayne of Cheboygan County; Frank and Most of Emmett County; Duffie and G. H. Wood of Auburn County; and Armstrong and McMillan of Charlevoix County. Secretary Dr. Brenner was asked to serve as secretary of this committee.

Drs. L. B. Wood, G. H. Wood of Bellaire, and E. Christie of Cheboygan were admitted to membership.

Col. C. J. Gray, Petoskey, gave an interesting talk on "Dental Caries," which he illustrated with X-ray films.

The meeting adjourned.

E. J. BRENNER, *Secretary.*

LUCE COUNTY

The Luce County Medical Society met at the Newberry State Hospital on February 24, 1932. There was a 100 per cent attendance, and we had as guests the local dentists and graduate nurses. The speaker of the evening was M. Cooperstock from the Northern Michigan Children's Clinic, at Marquette. His talk on "Rickets and Enlargement of the Thymus" was illustrated by lantern slides and X-rays. We appreciated very much, and derived a great deal of benefit from, Doctor Cooperstock's talk.

GEO. F. SWANSON, *Secretary.*

SAINT CLAIR COUNTY

A regular meeting of Saint Clair County Medical Society was held Tuesday, February 2, 1932, at Edgewater Inn, Port Huron, Michigan. After the usual supper attended by twelve members and two guests, Dr. J. E. Gordon and Dr. F. H. Top of the Herman Kiefer Hospital, Detroit, Michigan, the meeting was called to order with the following members present: Doctors Patterson, Boughner, DeGurse, McNair, Fraser, D. J. McColl, McKenzie, Armsbury, Callery, Burley, Waters, Windham, Battley and Kesl.

Minutes of the preceding meeting were read and approved. Dr. E. R. McNair was elected to membership. Card of thanks from Mrs. Reginald Smith, thanking the Society for flowers sent at the time of the death of her mother, was read and placed on file. Letter from Dr. C. G. Jennings relative to subjects to be discussed by Dr. Hirschman at a future meeting was read and one of the four suggested themes was selected by motion, duly made, supported and carried. A letter written by a practising physician of the city of Port Huron was read and referred to the Grievance Committee. President Patterson announced the following committees: Medicolegal—H. O. Brush, Chairman; T. E. DeGurse and A. J. MacKenzie, members. Grievance—C. F. Thomas, Chairman; J. D. McColl and C. A. MacPherson, members. The consideration of a future meeting place was laid upon the table by motion duly made, supported and carried.

Dr. John E. Gordon, of the Department of Health of Detroit, addressed the Society on "Poliomyelitis." The subject was presented in a most interesting and practical manner and many important points were brought out. Among those stressed by Dr. Gordon were (1) seasonal occurrence, (2) probability of large numbers of immunes among the adult population, especially in the large centers of population, (3) distribution of the disease in states of Atlantic seaboard and New England and in the north central states, (4) symptomatology, (5) differential diagnosis, (6) proper time to do a spinal puncture, (7) importance of rest in bed, (8) importance of use of convalescent sera early if a supply is available, (9) advisability of use of whole adult blood early or at any time before onset of paralysis, (10) immobilization of affected extremities in treatment of paralyses. Discussion of the subject by A. L. Callery, M.D., and several others was followed by the usual manner of closing by Dr. Gordon. Meeting adjourned.

A regular meeting of Saint Clair County Medical Society was held at the Edgewater Inn, Port Huron, Michigan, Tuesday, February 16, 1932. The following members and guests were present at supper: Doctors Patterson, Heavenrich, D. J. McColl, McNair, Bowden, Derck, N. J. McColl, Windham, Webster, Waltz, MacPherson, Boughner, Waters, Callery, H. O. Brush, Vroman, DeGurse, MacKenzie and John E. Campbell of Brown City, Mich. After supper Doctors Fraser, Attridge and Wellman were present.

Meeting was called to order by President Patterson. The minutes of the preceding meeting were read and duly approved. Applications for membership were received from Doctors W. F. McNaughton and J. R. Ware, and committees were designated by the presiding officer to investigate the same and report at the next regular meeting. Communications were read and a committee consisting of Doctors Callery, H. O. Brush, Attridge, Wellman and MacKenzie was appointed to formulate replies to the questionnaire sent the Society by the Bureau of Medical Economics of the American Medical Association. A report from the grievance committee was read and placed on file. The Society decided to hold our next meeting at 6:00 P. M. instead of a half hour later because of a longer program arranged for that meeting.

The guest, Dr. John E. Campbell of Brown City, was then introduced by Dr. D. J. McColl. Dr. Campbell made a very interesting address, which was enjoyed by all present. Remarks were also made by Doctors DeGurse, Waters and MacKenzie. Dr. Campbell told of his early experiences as a country physician in the vicinity of Brown City. His talk was very interesting to all.

A regular meeting of Saint Clair County Medical Society was held at the Edgewater Inn, Port Huron, Michigan, Tuesday, March 1, 1932. Supper was served to twenty members and four guests at six P. M.

The meeting was called to order at seven-thirty P. M. by President Patterson, with the following guests and members present: E. E. Martmer, M.D., of Detroit; H. H. Learmont, M.D., and R. K. Hart, M.D., both of Croswell, Michigan, and Mr. M. M. Ricketts, a representative of the Petrolagar Company, were present as guests of the Society; Doctors Patterson, Webster, Heavenrich, Waltz, MacKenzie, Thomas, Attridge, Battley, McNair, Boughner, Carney, Derck, Vroman, D. J. McColl, Schaefer, N. J. McColl, Sites, Waters, H. O. Brush, Kesl, LeGalley, Windham, Bowden, Wellman, MacPherson, Callery, Treadgold and Fraser.

It is needless to remark that the attendance at this meeting was gratifying to the officers of the Society. The program was exceptionally interesting and very much enjoyed by all present.

The minutes of the preceding meeting were dispensed with by order of the President in order to save time. After hearing from two membership committees the Society voted to receive J. R. Ware, M.D., 3322 Twenty-fourth Street, Port Huron, Mich., into membership and rejected the application of another physician. Communications were read.

The guest of the evening, Dr. E. E. Martmer of Detroit, made a splendid address upon the subject, "Use of convalescent sera in the treatment of contagious diseases." Unfortunately the Secretary is unable to report completely upon the subject as presented by Dr. Martmer. However, the points emphasized were roughly as follows: (1) the simplicity of the required technic, which Dr. Martmer described in detail with an observation that in the work at the Children's Hospital no difficulty was found in keeping the collected sera sterile; (2) the value of convalescent serum as a therapeutic agent, its dependability if potent and its freedom from objectionable reaction; (3) the speaker's belief that each sizable community should collect and refrigerate a stock of convalescent sera when available convalescent patients were at hand, to be used in future emergencies; (4) advantages of convalescent sera over horse sera; (5) the use of sera particularly in the treatment of measles, a disease with

a high mortality in Michigan. The speaker stressed the point that if the serum were administered between the fifth and tenth day after exposure, an attenuated form of the disease resulted, giving the patient future active immunity; (6) the use of serum in poliomyelitis, with the greatest benefit if given in the pre-paralytic stage at the onset of positive spinal fluid findings, although, said Dr. Martmer, it may be given later with beneficial result upon the further extension of the paralysis; (7) the use of sera in other diseases such as mumps, chicken pox, epidemic encephalitis, scarlet fever, etc.; (8) the use of adult serum in treatment of primary bronchopneumonia in children under the age of two. Dr. Martmer spoke of his experience at the Children's Hospital with a series of one hundred fifty such cases, in which the mortality was lessened fifty per cent in comparison with a group of control cases.

The discussion was opened by J. C. S. Battley, M.D., and following him were many others, many queries being addressed to the speaker relative to certain points considered in the subject during the address. Dr. Martmer in closing replied satisfactorily to the questions referred to above. In conclusion a rising vote of thanks was extended the speaker for his able address and for coming up to Port Huron in order to meet with the Society.

The second part of the program was the exhibition of motion pictures with sound on the subject, "Anatomy of the Female Pelvis and Perineum," by Drs. H. B. Kellogg and W. F. Windle, of the Medical School of Northwestern University, Chicago. Mr. M. M. Ricketts, representative of the Petrolagar Company, gave this part of the program. The elementary nature of the subject took many of those present back to the days of long ago spent in the dissecting room. The picture and the description of the same was very interesting and very much enjoyed by all present. It was observed that not a single member left the room before the completion of the program. A rising vote of thanks was given Mr. Ricketts.

Dr. Theo. Heavenrich announced to the Society that Mrs. W. J. Cassidy had passed away, and upon motion duly seconded and carried the Secretary was instructed to wire Dr. Cassidy the sympathy of the members of the Society. Adjourned.

GEORGE M. KESL,
Secretary-Treasurer.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. J. EARL McINTYRE, President, Lansing
MRS. W. E. McNAMARA, Secretary, Lansing

Mrs. McIntyre announces the following addition to her official family:

State Chairman of Public Relations Committee,
Mrs. George Van Rhee,
4108 Pasadena Ave., Detroit, Mich.
State Legislative Chairman,
Mrs. E. S. Peterson,
504 South Jackson, Jackson, Mich.

MRS. CHAS. J. BARONE,
State Chairman, Publication Committee.

Our National President-elect, Mrs. Walter Jackson Freeman of Philadelphia, is back home after a stormy voyage from Germany with her convalescent son. Our congratulations are to ourselves as well as to her for her safe return.

It is a frequent complaint among our Woman's Auxiliary that they never see "The Journal." Some of the members may not have noticed that this Journal carries a section for the physicians' wives. It is hoped that each issue will be placed in the hands of every physician's wife before the month has passed.

BAY COUNTY AUXILIARY

The regular monthly meeting of the Women's Auxiliary of Bay County Medical Society was held Wednesday, February 24, at the Ann Peterson Tea Room. A delicious dinner was served to twenty members, after which the business meeting was called to order by the President, Mrs. C. A. Steward. Reports of the Treasurer and Secretary were read and approved. Announcement was made that members of the Medical Society were planning to entertain the Auxiliary in the near future. Time was spent folding paper towels for the Civic League Nurses. 27,000 were counted when we adjourned to meet with Mrs. J. W. Hathurst for the March meeting.

L. M. SWANTIK.

OAKLAND COUNTY AUXILIARY

The members of the Oakland County Medical Auxiliary are enjoying unusually interesting programs this year.

At the November meeting held in Royal Oak, Paul Honore, Detroit artist, addressed the group.

In January, at the luncheon meeting held in Pontiac, the guest speaker was Dr. Mercer Brennan of Plymouth. Her subject was "The value of a musical education to the child."

February 24, the Auxiliary celebrated the Washington Bicentennial by entertaining their husbands with a bridge supper, at the home of the president of the society, Mrs. Robert Baker of Pontiac. Thirty-one tables of auction and contract were in play.

With the wide variety offered members in our programs, and with at least one social meeting planned for the near future, the Oakland County group find an ever increasing number looking forward to the fourth Friday of the month—our regular meeting day.

MRS. FRANK MERCER,
Chairman Publication Committee.

WAYNE COUNTY AUXILIARY

The Woman's Auxiliary to the Wayne County Medical Society held their regular monthly meeting on March 8, 1932, in the Club Rooms, 4421 Woodward Ave., at 2 P. M.

No program was given at this meeting, the session was given over to committee reports and unfinished business.

The Wayne County Medical Society celebrated the Washington Bicentennial by holding open house for members and their families. Luncheon was served at 12:30, a tea and musical for the Auxiliary and wives of members from 3 to 5, dinner at 6:30, the day terminating with bridge and dancing.

The Annual Benefit Bridge Tea given by the Auxiliary on February 29 in the Club Rooms was a

success financially and socially. Eighty tables were in play.

Mrs. R. E. Loucks was hostess to the Board of Directors on February 18 at a luncheon given in one of the beautiful rooms of the Club. The table looked lovely with a centerpiece of spring flowers All enjoyed the hospitality of our President very much.

Mrs. Chas. J. Barone,
Chairman, Publication Committee.

PHYSICAL MEASUREMENTS AND PHYSIOLOGIC PROCESSES IN YOUNG CHILDREN

William Palmer Lucas and Helen Brenton Pryor, San Francisco, have tried to simplify classification of body build by merely comparing width to length of body. A single diameter of the pelvis was chosen for width, partly because it is easily measured, partly because the crests of the ilium are covered with relatively little subcutaneous tissues in children and partly because it is a constant measurement and not subject to changes with respiration as are the chest measurements. The widest diameter of the iliac crests was measured with calipers pressed firmly to obtain, as nearly as possible, the greatest width of the innominate bone. This measurement was divided by the vertex measurement to get the intercristal diameter in per cent of standing height, thus comparing two linear measurements of length and width to obtain a single index of build. In dealing with children the factor of growth makes comparison of direct measurements of doubtful value. This width-length comparison involves two very simple measurements which can be carried out in any office practice. The width-length index obtained gives direct information concerning the type of bony framework possessed by an individual. Therefore it is a measure of the unchangeable inherited characteristic of body build. Davenport has proved the genetic basis of body build. Nutritional status and body build are two separate entities which nevertheless may have a direct relationship to each other. As has been pointed out, a large heavy framework requires larger muscles to move it and is also capable of carrying a larger mass of fat and subcutaneous tissue than a small one. For this reason, large boned children may be classed overweight and small boned children may be classed underweight by height-weight table standards when both may be normal weight for their inherited framework. (The converse is true also.) The width-length index increases directly with the relative breadth of the child since it expresses the simple relationship of width to length of the body. Broad, stocky children have high indices and slender children have low indices. Indices vary from 130 to 190. The width-length index can be used to compare children of all ages since it expresses a relationship of each body to itself. Empirically, it can be said that a low index means a slender child with small bones and a high index means a broad child with large bones. The authors recognize the necessity of feeding children according to their powers of digestion and their individual anatomic needs. These two things are indicated by the body type, which can be measured satisfactorily by calculating the width-length index. If the existence of divergent body types is recognized which in the whole population grade imperceptibly into one another there will be a more labile conception of normal, and it should be easy to classify any given individual in a wide zone, as the standards for normal are different in these different zones. The three weight zones that the authors recognize start with the central average or intermediate group whose proportions correspond closely to the ideal in the height-weight-age tables. This represents the mass of the population. But instead of considering variations in either directions as pathologic, i.e., underweight or overweight, a normal zone is recognized for the linear type individuals who are underweight according to height-weight-age tables but whose width-length ratio is small, below 150, and a normal zone is recognized for the lateral type individuals who are overweight according to height-weight-age tables but whose width-length ratio is large, above 170. A lateral type individual might actually be underweight even though he was heavier than the average in the height-weight-age tables and, conversely, a linear individual might actually be overweight even though he was under the average in the height-weight-age table. —*Journal A. M. A.*

MENTAL DERANGEMENTS IN HYPOTHYROIDISM

Emeline P. Hayward and Andrew H. Woods, Iowa City, assert that insufficiency of thyroid secretion sometimes shows its most striking effects through malfunctioning of the brain cells. The patient may become depressed and apprehensive, thought may become slow and bodily movements retarded. The condition is easily mistaken for a depressed psychosis. Or there may be irritability and excitement leading to the diagnosis of mania. Patients may show thought distortion with hallucinations and delusions, which may become so bizarre as to be interpreted as signs of dementia præcox. In these psychotic cases, even though the physical signs of myxedema are present, those signs are easily overlooked. This is partly because some physicians at once relegate patients who show mental derangement into a nimbus of mystery and infer that somatic disease cannot be expressed in mental symptomatology. A more excusable cause for overlooking evidence of physical disease is that the patient's mental attitude sometimes makes physical examination difficult or impossible.—*Journal A. M. A.*

INTRAMUSCULAR USE OF LIVER EXTRACT

Maurice B. Strauss, F. H. Laskey Taylor and advantages of the intravenous method and is decid-William B. Castle, Boston, present preliminary observations from which it appears that the intramuscular use of liver extract has all the theoretical edly practical both from a therapeutic and from an economic standpoint. Furthermore, some patients apparently prefer to inject a small quantity of liver extract intramuscularly rather than to ingest a large quantity of liver or to take an extract by mouth which is not altogether palatable. From the preliminary observations it seems possible that the extract necessary for a week's treatment when taken by mouth may, if given by daily intramuscular injections, suffice for from five to six months. The intramuscular method may be of even greater advantage in those cases requiring unusually large doses of extract by mouth or actually a life-saving measure in severely ill patients. The adequate treatment of cord lesions requiring large amounts of liver extract may be greatly simplified by the parenteral injection of liver extract alone or as an accessory to oral therapy. The authors describe a method of preparing an extract of liver suitable for intramuscular injection and highly potent in pernicious anemia. Maximal reticulocyte responses were obtained from the daily intramuscular injection of the extract derived from 10 Gm. of liver. The potential therapeutic and economic advantages of this method are suggested.—*Journal A. M. A.*

THE DOCTOR'S LIBRARY

SURGERY OF THE CHEST. By George F. Straub, M.D., F.A.C.S., with 341 illustrations, including 68 color plates. Pages 475. Price $10.50. Charles C. Thomas, Publisher, Springfield, Illinois. 1932.

Thoracic surgery is one of the comparatively recent developments in the treatment of certain pathologic conditions of the chest. The past two decades have witnessed its evolution, which has placed it on a par with other branches of surgery. While this is true, the contributions of the thoracic surgeon have not penetrated into the minds of the medical profession at large. Hence the necessity of such a work as this. The author has assumed a knowledge of the anatomical and physiological data concerned with the subject. No one would attempt such regional surgery without a knowledge of the facts that anatomy and physiology present which are obtained to better advantage in the technical works on these subjects. The surgical treatment of pulmonary tuberculosis has been dealt with very thoroughly. The roentgenographic examination of the thoracic cage is very well presented by Dr. H. Arnold. A feature of the work which deserves special mention is the illustrations. As illustrating technic, the author has resorted to line drawings which do this very well. The photographic and radiographic illustrations are all that can be desired. The book is printed on a very fine quality of paper and very completely indexed, which makes it a convenient work for ready reference.

A TEXT-BOOK OF CLINICAL NEUROLOGY. By Israel S. Wechsler, M.D., Professor of Clinical Neurology, Columbia University, New York; Attending Neurologist, Neurological Institute and The Montefiore Hospital, New York City. Second Edition, Revised. 759 pages with 142 illustrations. Philadelphia and London: W. B. Saunders Company. 1931. Cloth, $7.00 net.

The reception given to this textbook during the past five years has resulted in this new and up-to-date edition. Here the student and general practitioner as well as the specialist will find a digest of what is known in neurology. The author has brought the subject of encephalography up to date as well as the pathology of tumors of the brain. The epilepsies have been the subject of much study. The Oppenheim classification originally followed has been departed from and the author has rearranged his system of classification. An interesting feature is the references given at the ends of the various subjects treated.

W. J. S.

PROHIBITING MINDS AND THE PRESENT SOCIAL AND ECONOMIC CRISIS. By Stewart Paton, M.D., Lecturer on Psychiatry, Johns Hopkins University, Baltimore. Paul B. Hoeber, Inc., New York. 1932. Price $2.00.

As may be assumed from the title, this is a timely book. Its three chapters deal with Civilization Shock, Remedies, and Educating the Intellectuals. The book, among other things, is an argument against the mental attitude that resulted in the eighteenth amendment. It deals also with the mental reaction that resulted in Russian communism. The so-called reformer is discussed at length in the first chapter in a way that is more vigorous than analytic. The third chapter, however, has a greater appeal. In it the author discusses the importance of rhythm as a factor in biologic life and points out the inconsistency of the present pace of social life. When we come as a nation to recognize this discrepancy and to regulate our pace accordingly, instead of endeavoring to correct abuses by prohibitions, then and then only will we approach a condition of society in which individual men and women will lead more comfortable lives.

THOMAS SAY, EARLY AMERICAN NATURALIST. By Harry B. Weiss and Grace M. Ziegler. A foreword by L. O. Howard. 27 ill. 260 pp. Charles C. Thomas, Springfield, Ill. 1931. $5.00.

Unlike most biographies which one peruses, this of Thomas Say will impress the reader as unusual. Instead of a psychological panorama composed by an author following a study of his subject, this work is a model of critical historical writing. Letters, papers and various other source materials are extensively quoted. The arrangement and selection of these are so well done that the reader is given an excellent account of the intellectual life of the United States as it was at the beginning of the nineteenth century.

At a time when biological studies were practically limited to the specimen cabinets and leisure of professional men, Thomas Say, as the first professional American naturalist, was a figure of no little interest. His extensive expeditions through the then unknown parts of the country, his ethnological studies on the Indians, his extensive publications on insects and shells, his friendship with a number of outstanding men, his relations with the early societies and his connections with the New Harmony social and educational experiment have been of considerable importance in the intellectual development of the United States.

Although the senior author is well qualified through his entomological training to criticise and evaluate the work of Say, he has preferred to present a complete and well documented account of the man, his work and his times—leaving specific evaluations, which are bound to be transitory, to his readers.

The publisher is to be commended both for his presentation of an outstanding biography and for the attractive format.

W. T. D.

ROENTGEN TREATMENT OF AGRANULOCYTOSIS

Albert E. Taussig and Paul C. Schnoebelen, St. Louis, call attention to the fact that cases of agranulocytosis are being observed with increasing frequency, so that it may be said to have ceased to be a rare disease. The symptom-complex of agranulocytosis has been circumscribed somewhat arbitrarily. While it is convenient to distinguish it from the bone marrow depression observed in benzine poisoning, in the course of antisyphilitic treatment and in the aleukemic stage of lymphatic leukemia, borderline cases are not infrequent, in which proper classification is difficult. Two of four cases reported by the authors show clearly that the fall in the granulocytic blood count may precede the appearance of a sore throat. A study of the literature reveals numerous similar observations and justifies the conclusion that the agranulocytic blood picture is the cause and not the result of the angina. Agranulocytosis occurs about twice as frequently in women as in men; the mortality in the two sexes is about the same. Of the methods of treatment at present in use, the most promising appears to be the irradiation of the long bones by means of minimal doses of X-rays. Transfusions are also apparently useful. —*Journal A. M. A.*